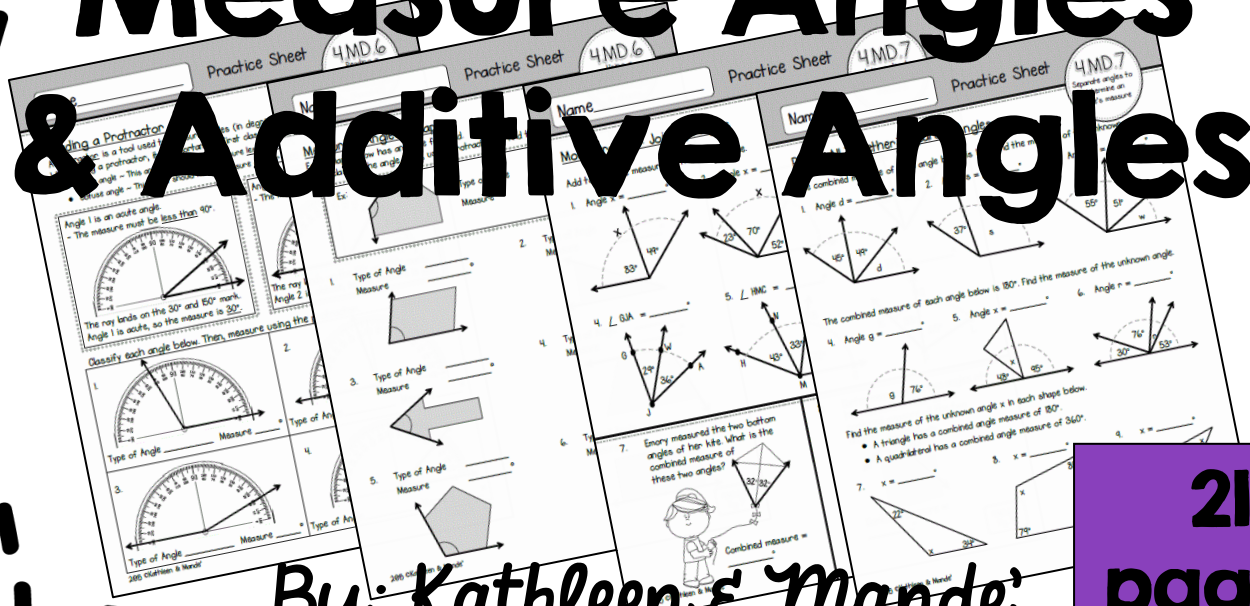
Fourth Grade

CCSS Math Practice

4.MD.6

4.MD.7

Measure Angles & Additive Angles



By: Kathleen & Mande'

21 pages in all

4th Grade CCSS Math Practice Packet

4.MD.6 & 4.MD.7

Table of Contents ~ Measuring & Additive Angles

Credits: I'm Lovin' Life, Creative Lesson Cafe, Kimberly Geswein Fonts, MyCuteGraphics

Name_____

Practice Sheet

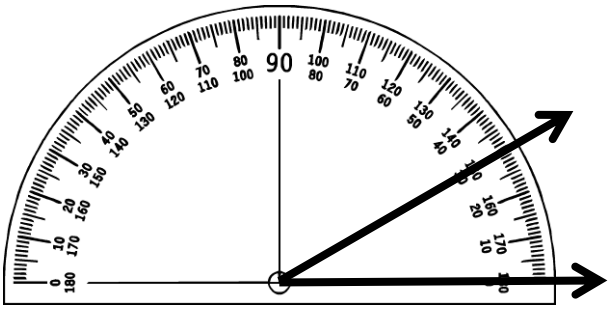
4.MD.6
Reading a protractor to measure angles
(Nearest 10°)

Reading a Protractor

A protractor is a tool used to measure angles (in degrees).
When using a protractor, it is important to first classify the angle:

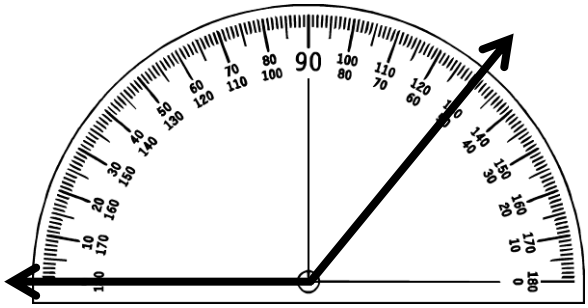
- Acute angle ~ This angle should have a measure less than 90°.
- Obtuse angle ~ This angle should have a measure greater than 90°.

Angle 1 is an acute angle.
- The measure must be less than 90°.



The ray lands on the 30° and 150° mark.
Angle 1 is acute, so the measure is 30°.

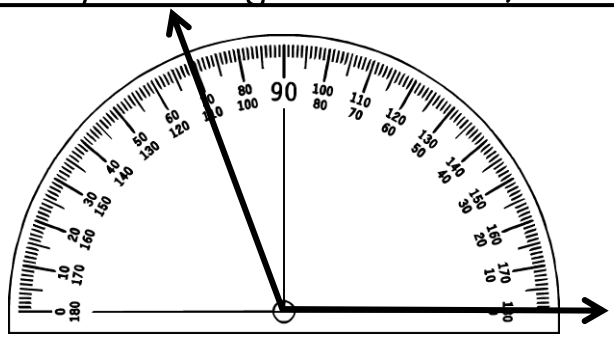
Angle 2 is an obtuse angle.
- The measure must be more than 90°.



The ray lands on the 50° and 130° mark.
Angle 2 is obtuse, so the measure is 130°.

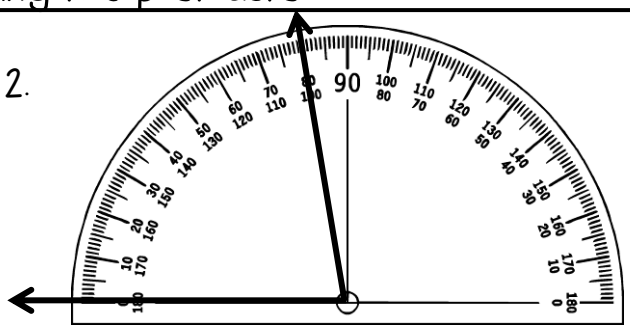
Classify each angle below. Then, measure using the protractor.

1.



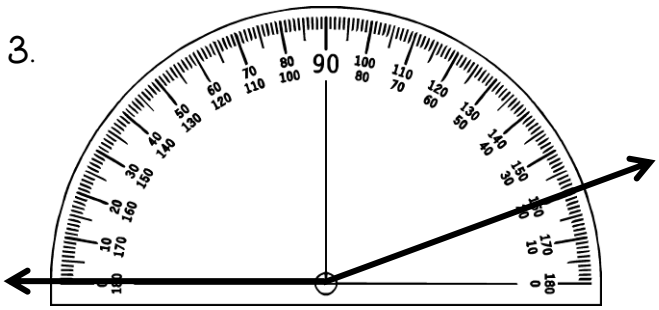
Type of Angle _____ Measure _____°

2.



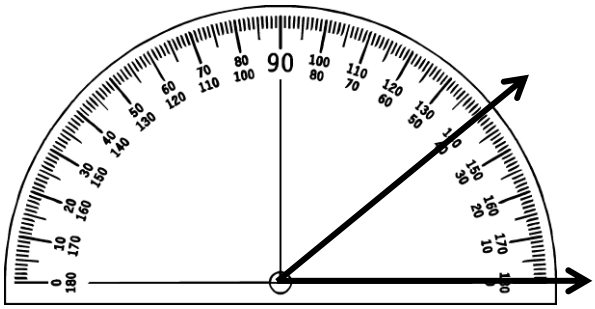
Type of Angle _____ Measure _____°

3.



Type of Angle _____ Measure _____°

4.



Type of Angle _____ Measure _____°

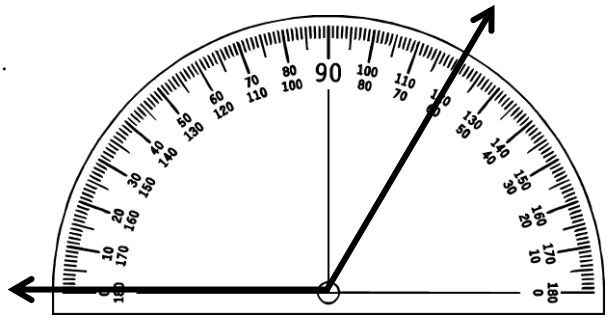
Name_____

Practice Sheet

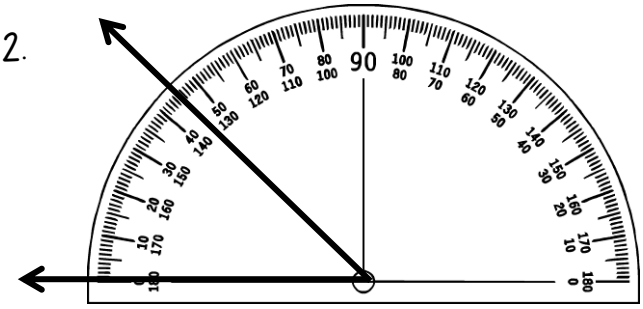
4.MD.6
Reading a protractor to measure angles
(Nearest 5°)

Reading a Protractor: More Practice

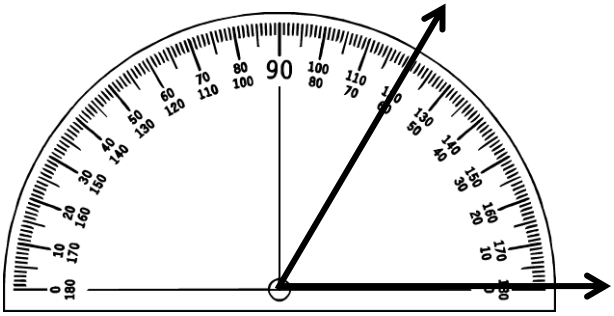
Classify each angle below. Then, use the protractor to measure the angle.

1.


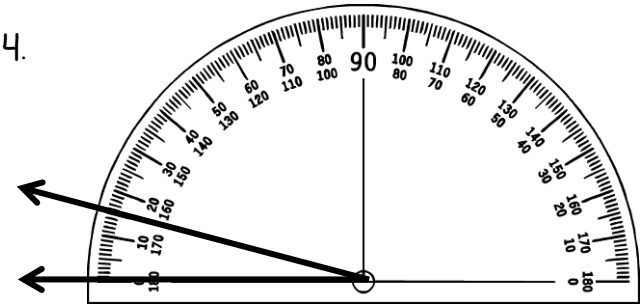
Type of Angle _____ Measure _____°

2.


Type of Angle _____ Measure _____°

3.


Type of Angle _____ Measure _____°

4.


Type of Angle _____ Measure _____°

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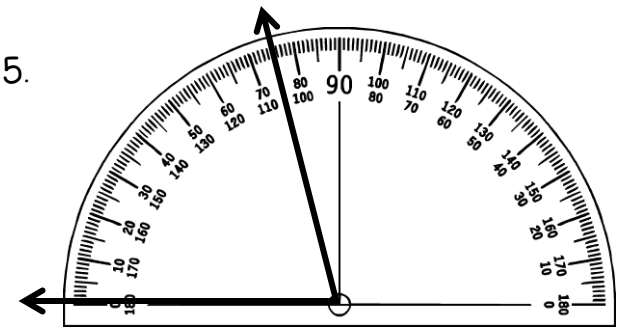

Type of Angle _____ Measure _____°

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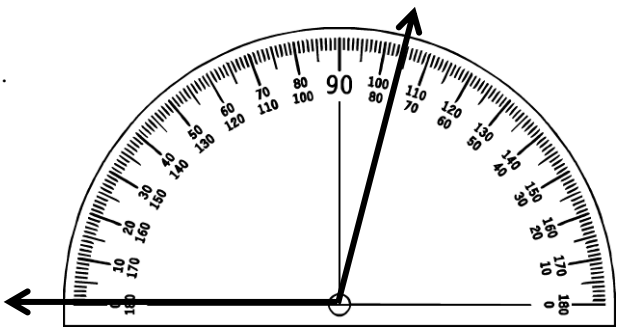

Type of Angle _____ Measure _____°

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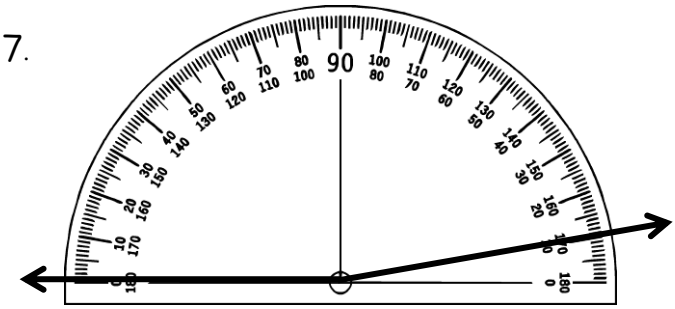
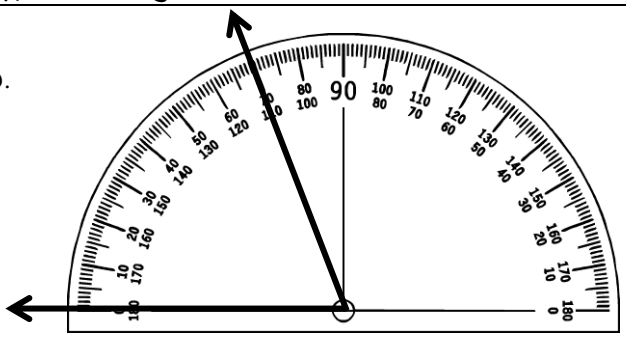


Type of Angle _____ Measure _____°

8.


Type of Angle _____ Measure _____°

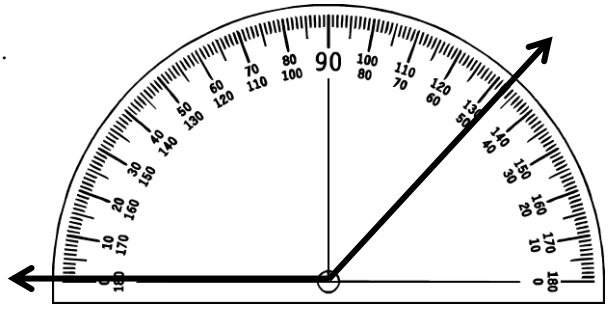
Name_____

Practice Sheet

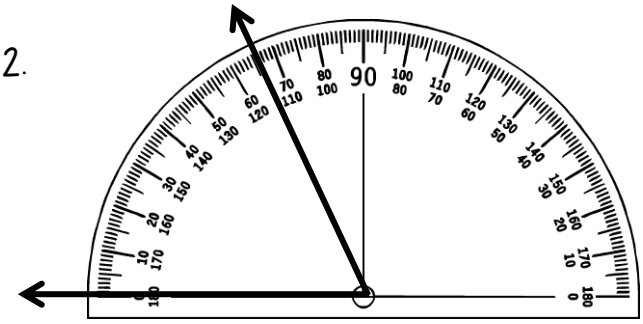
4.MD.6
Reading a protractor to measure angles
(Nearest 1°)

Reading a Protractor: More Practice

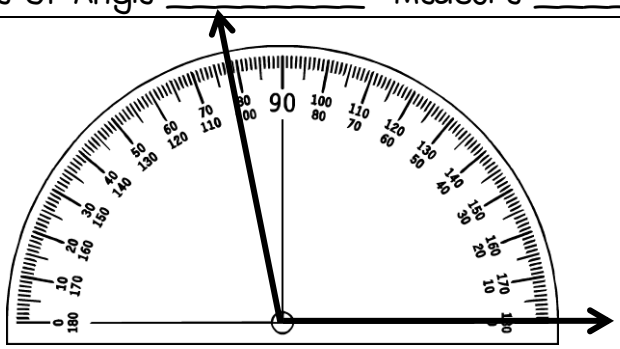
Classify each angle below. Then, use the protractor to measure the angle.

1.


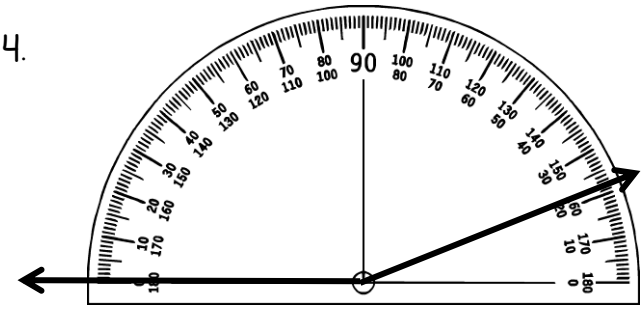
Type of Angle _____ Measure _____°

2.


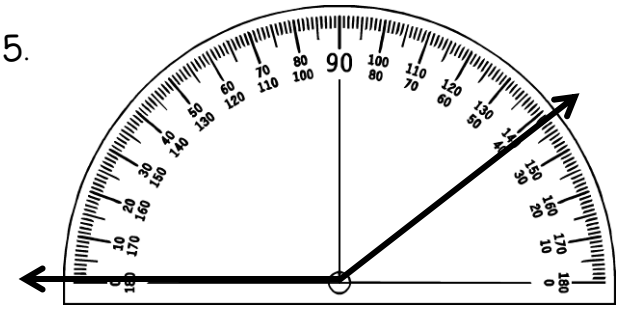
Type of Angle _____ Measure _____°

3.


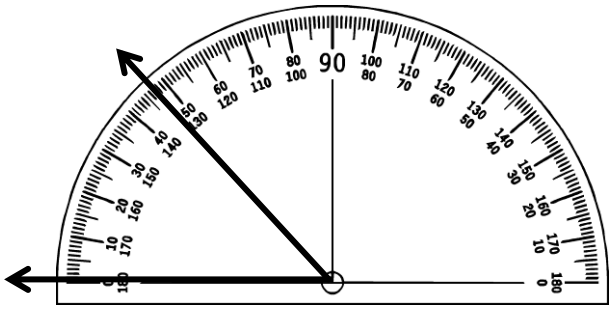
Type of Angle _____ Measure _____°

4.


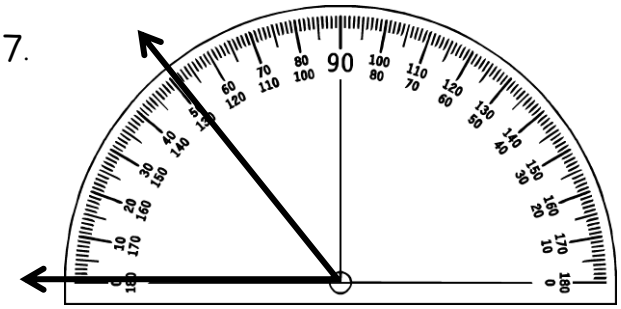
Type of Angle _____ Measure _____°

5.


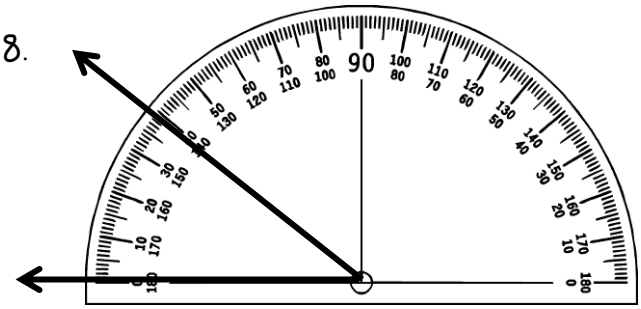
Type of Angle _____ Measure _____°

6.


Type of Angle _____ Measure _____°

7.


Type of Angle _____ Measure _____°

8.


Type of Angle _____ Measure _____°

Name_____

Practice Sheet

4.MD.6
Using a protractor to measure angles

Measuring Angles

A protractor is a tool used to measure angles (in degrees). The box below shows the steps to follow when using a protractor.

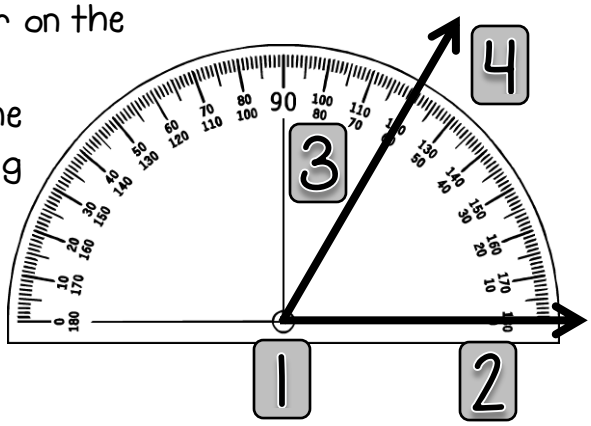
Step 1: Place the center point of the protractor on the vertex of the angle.

Step 2: One ray of the angle should be along the straight edge of the protractor pointing at the 0° mark.

Step 3: Find the mark on the protractor that aligns with the angle's second ray.

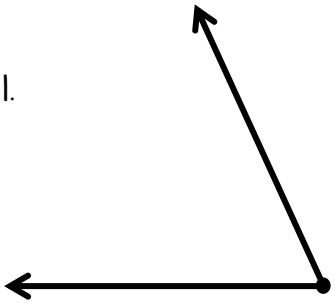
Step 4: Read the angle measure.

*The ray points at both 60° and 120°.
Since the angle is acute, the correct measure is 60°.



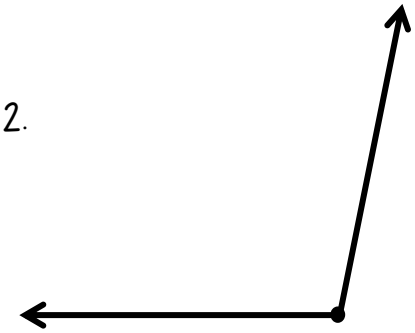
Use a protractor to find the angle measures below.

1.



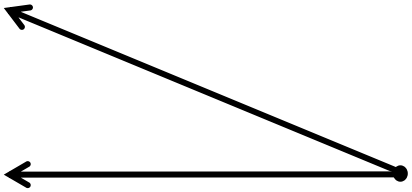
_____ °

2.



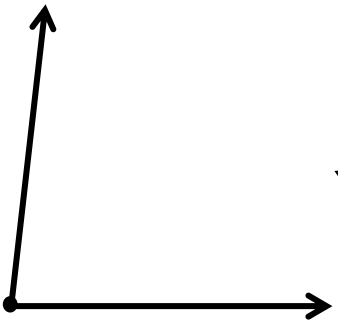
_____ °

3.



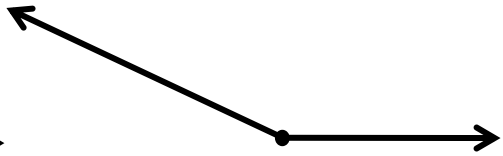
_____ °

4.



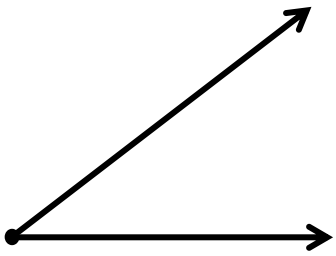
_____ °

5.



_____ °

6.



_____ °

Name_____

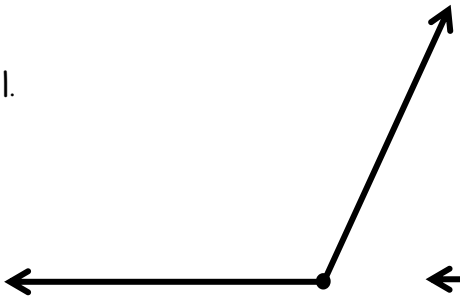
Practice Sheet

4.MD.6
Using a protractor to measure angles

Measuring Angles: More Practice

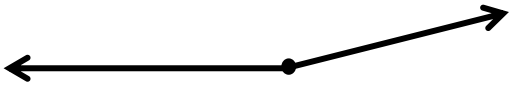
Use a protractor to find the angle measures below.

1.



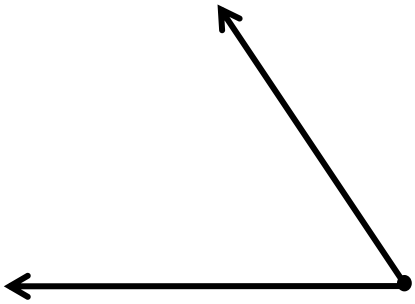
_____°

2.



_____°

3.

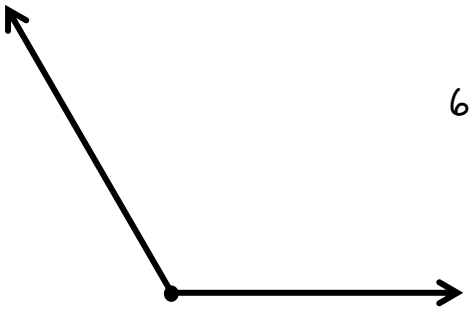


_____°

4.

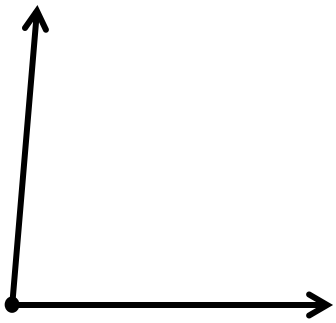
_____°

5.



_____°

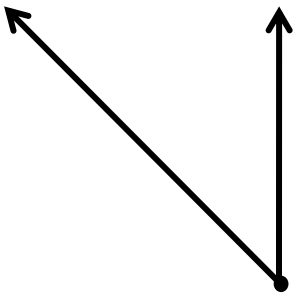
6.



_____°

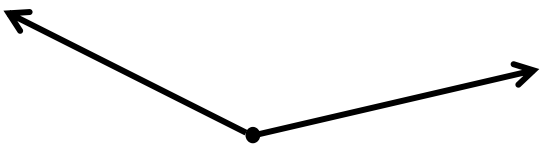
For the angles below, you will need to turn your protractor so that one ray points to the 0° mark. Then, measure.

7.



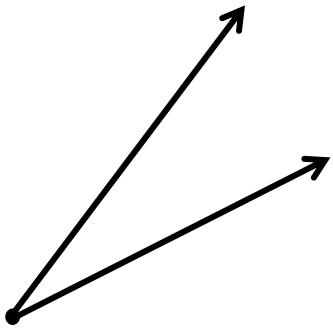
_____°

8.



_____°

9.



_____°

Name_____

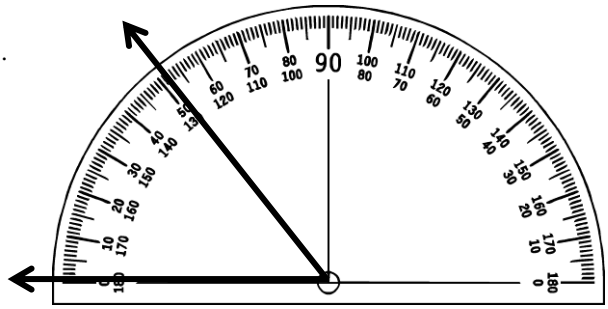
Practice Sheet

4.MD.6
Using a protractor to measure angles

Put It All Together: Measuring Angles

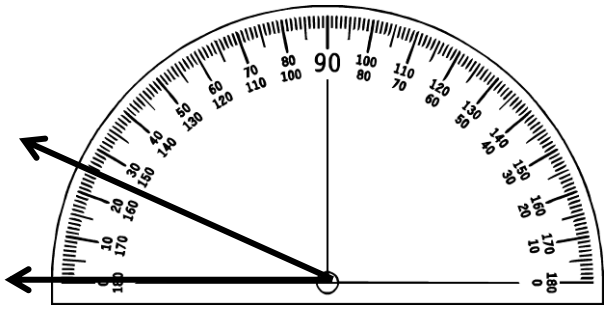
Classify each angle below. Then, use the protractor to measure the angle.

1.



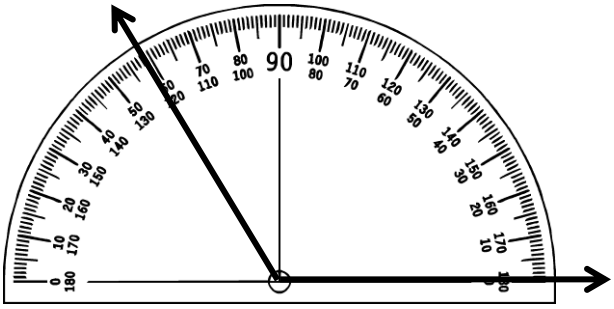
Type of Angle _____ Measure _____°

2.



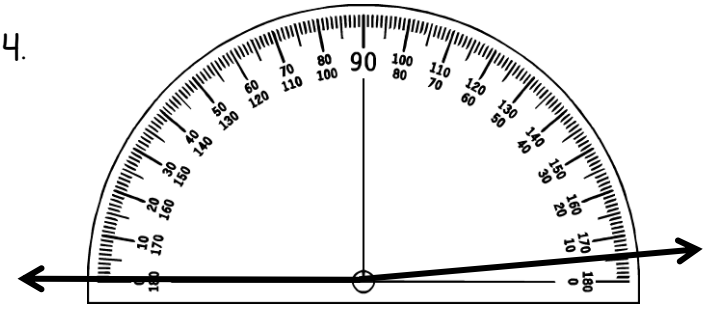
Type of Angle _____ Measure _____°

3.



Type of Angle _____ Measure _____°

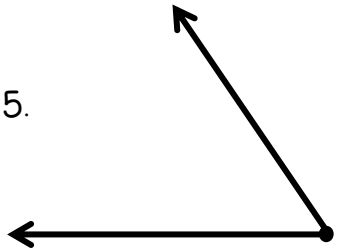
4.



Type of Angle _____ Measure _____°

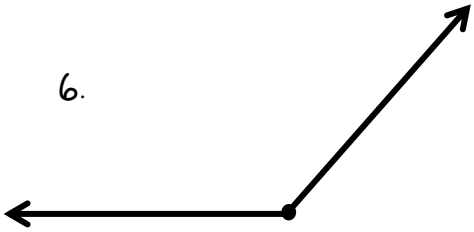
Use a protractor to find the angle measures below.

5.



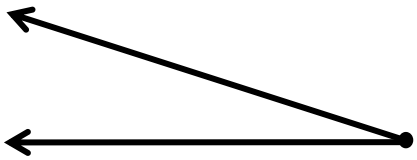
_____°

6.



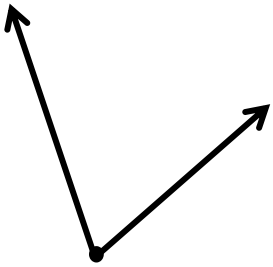
_____°

7.



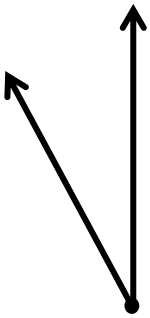
_____°

8.



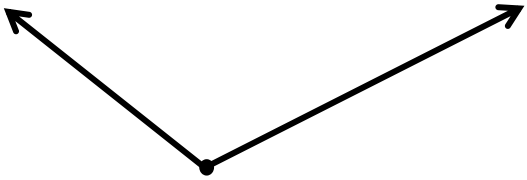
_____°

9.



_____°

10.



_____°

Name_____

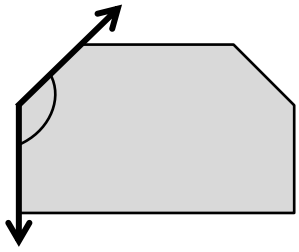
Practice Sheet

4.MD.6
Using a protractor to measure angles in shapes

Measuring Angles: Shapes

Each shape below has an angle featured.
First, classify the angle. Then, use a protractor to find the measure of the angle.

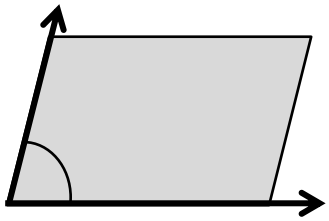
Ex:



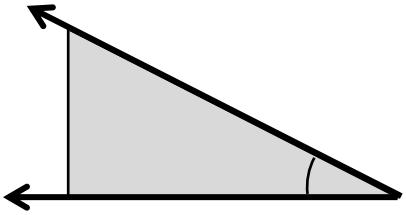
Type of angle obtuse

Measure 135°

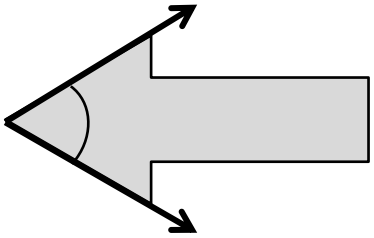
1. Type of Angle _____
   Measure _____°



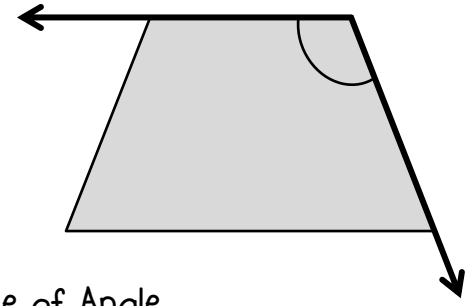
2. Type of Angle _____
   Measure _____°



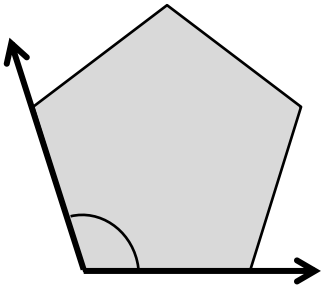
3. Type of Angle _____
   Measure _____°



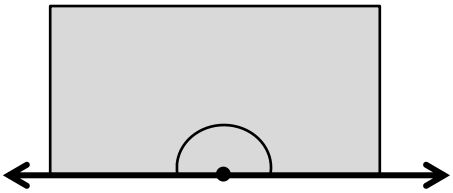
4. Type of Angle _____
   Measure _____°



5. Type of Angle _____
   Measure _____°



6. Type of Angle _____
   Measure _____°



Name_____

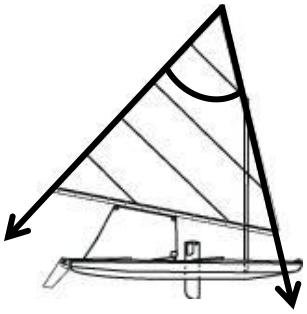
Practice Sheet

4.MD.6
Using a protractor to measure angles

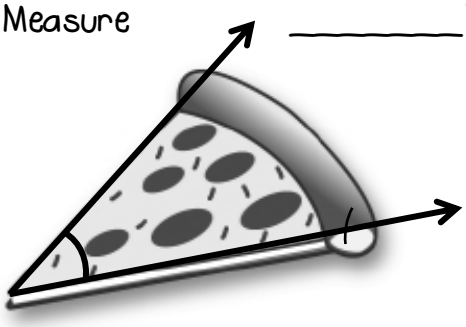
Measuring Angles: Real-Life Objects

Each picture below has an angle featured.
First, classify the angle. Then, use a protractor to find the measure of the angle.

1. Type of Angle _____
   Measure _____°

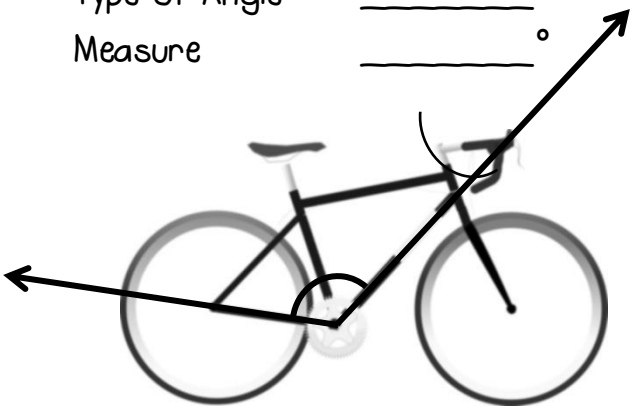


2. Type of Angle _____
   Measure _____°

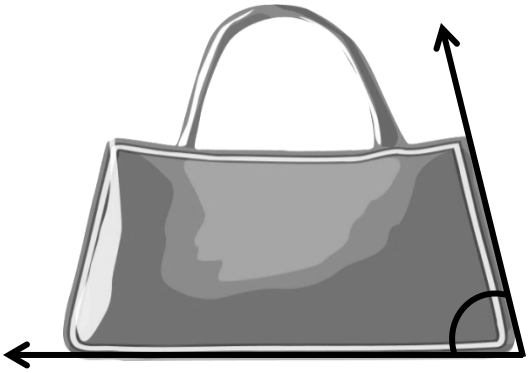


3. Type of Angle _____
   Measure _____°

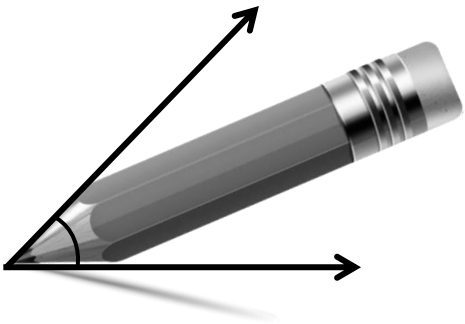
4. Type of Angle _____
   Measure _____°



5. Type of Angle _____
   Measure _____°



6. Type of Angle _____
   Measure _____°



Name_____

Practice Sheet

4.MD.6
Using a protractor to draw angles

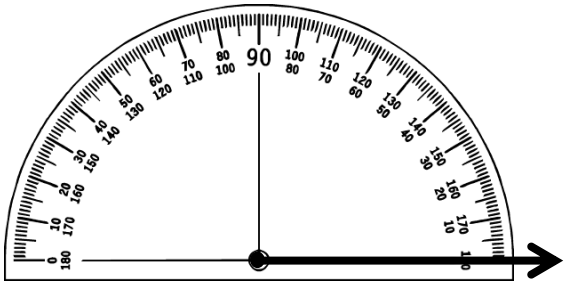
Draw Angles

Now that you know how to use a protractor to measure angles, you can use a protractor to draw angles. Follow the steps below.

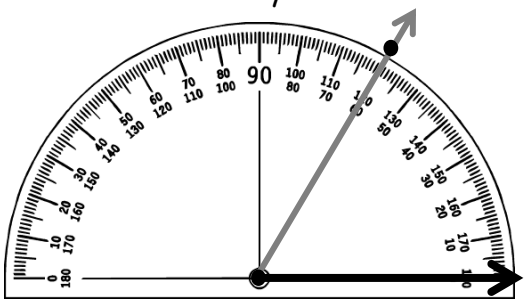
Example: Draw an angle that measures 60°.

Step 1:
Draw a ray and mark an endpoint.

Step 2:
Place the protractor on the ray just as you would when you measure an angle.



Step 3:
On the protractor, find 60° and make a mark.
Now draw a ray to connect it.



Use a protractor to draw the angle.

1. 30°

2. 100°

3. 80°

4. 55°

5. 25°

6. 145°

Name_____

Practice Sheet

4.MD.6
Using a protractor to draw angles

Draw Angles: More Practice

Use a protractor to draw the angle.

1. 90°

2. 75°

3. 120°

4. 10°

5. 115°

6. 165°

Draw an angle that is described by the given measurements.
Then, measure and classify the angle (acute, right, obtuse, or straight).

7. Greater than 30° and less than 40°

Measure _____°
Angle type _____

8. Greater than 90° and less than 150°

Measure _____°
Angle type _____

9. Less than 120°

Measure _____°
Angle type _____

Name_____

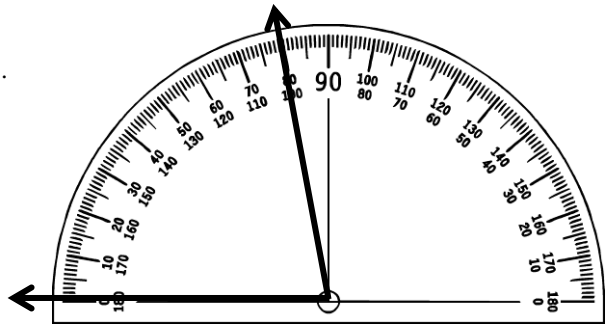
Practice Sheet

4.MD.6
Using a protractor to measure & draw angles

Put It All Together: Measure & Draw Angles

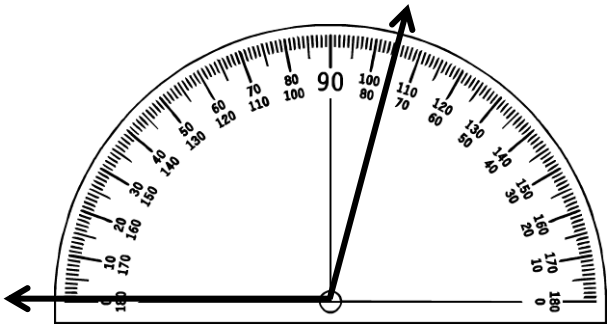
Classify each angle below. Then, use the protractor to measure the angle.

1.



Type of Angle _____ Measure _____°

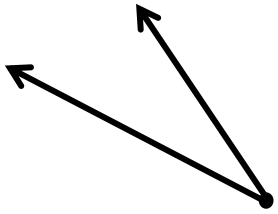
2.



Type of Angle _____ Measure _____°

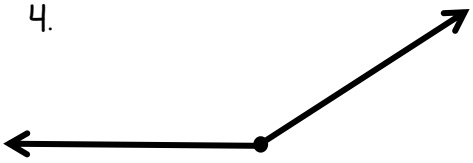
Use a protractor to find the angle measures below.

3.



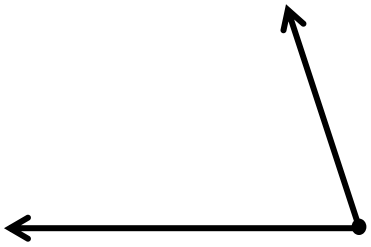
_____°

4.



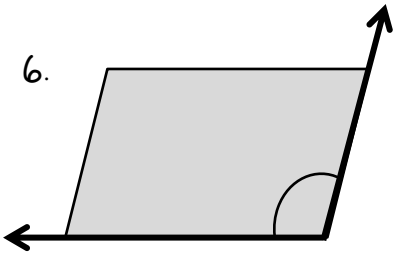
_____°

5.



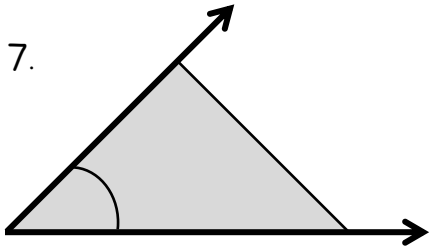
_____°

6.



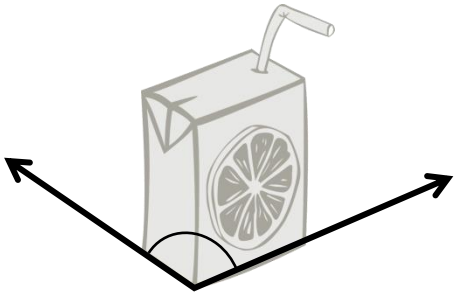
_____°

7.



_____°

8.



_____°

Use a protractor to draw each angle.

9. 40°

10. 155°

11. Greater than 10° and less than 30°

Name_____

Practice Sheet

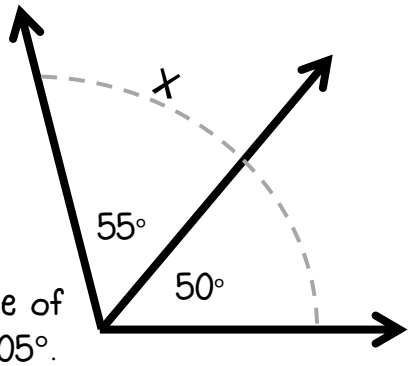
4.MD.7
Join angles to determine an angle's measure

Joining Angles

Two angles can be joined to form a larger angle. To determine the measure of the larger angle, add the two angle measures.

Example 1:

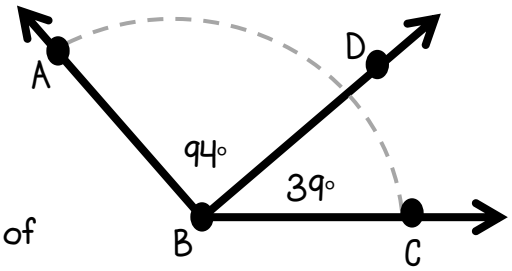
$$\begin{array}{r} 55^\circ \\ +\ 50^\circ \\ \hline 105^\circ \end{array}$$



The measure of angle x is 105°.

Example 2:

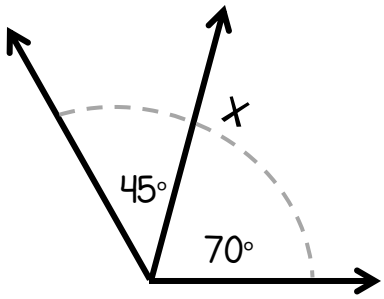
$$\begin{array}{lr} \angle ABD & 94^\circ \\ \angle DBC & +\ 39^\circ \\ \hline & 133^\circ \end{array}$$



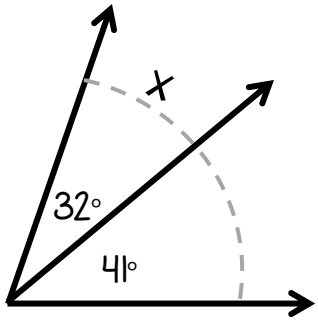
The measure of $\angle ABC$ is 133°.

Add to find the measure of the larger angle.

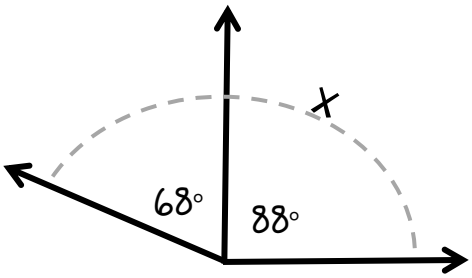
1. Angle x = _____°



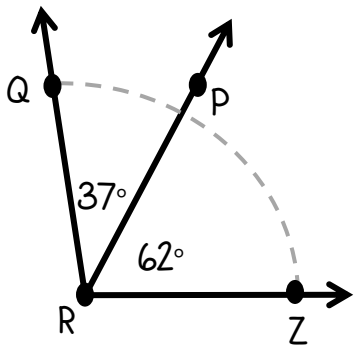
2. Angle x = _____°



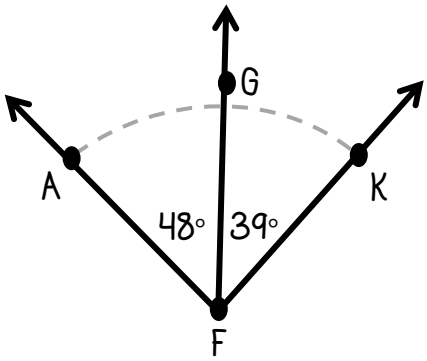
3. Angle x = _____°



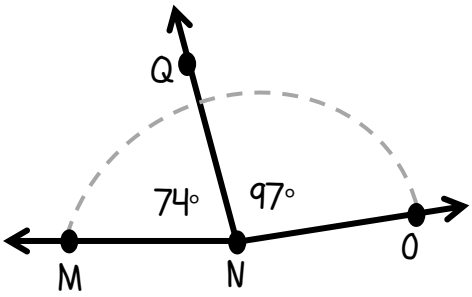
4. $\angle$ QRZ = _____°



5. $\angle$ AFK = _____°



6. $\angle$ MNO = _____°



Name_____

Practice Sheet

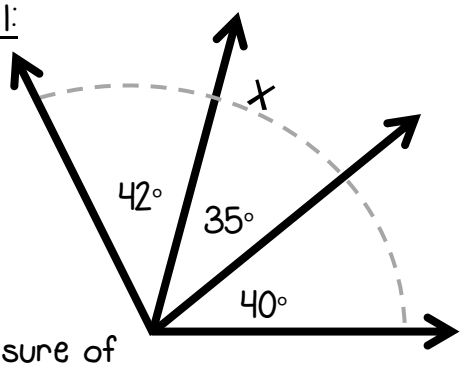
4.MD.7
Join angles to determine an angle's measure

Joining More than Two Angles

More than two angles can be joined to form a larger angle. To determine the measure of the larger angle, add <u>all</u> angle measures.

Example 1:

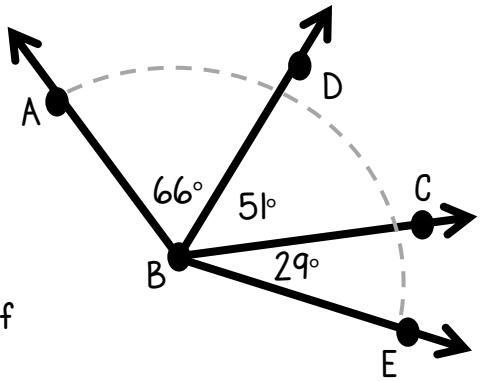
$$\begin{array}{r} 42^\circ \\ 35^\circ \\ +\ 40^\circ \\ \hline 117^\circ \end{array}$$



The measure of angle x is 117°.

Example 2:

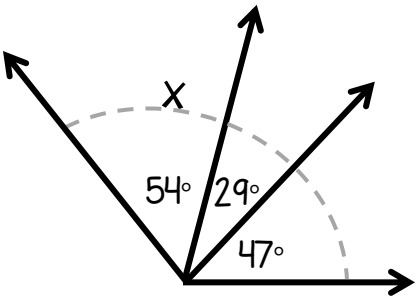
$$\begin{array}{lr} \angle ABD & 66^\circ \\ \angle DBC & 51^\circ \\ \angle CBE & +\ 29^\circ \\ \hline & 146^\circ \end{array}$$



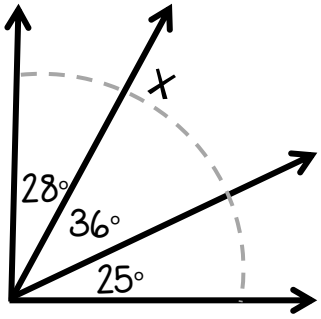
The measure of $\angle ABE$ is 146°.

Add to find the measure of the larger angle.

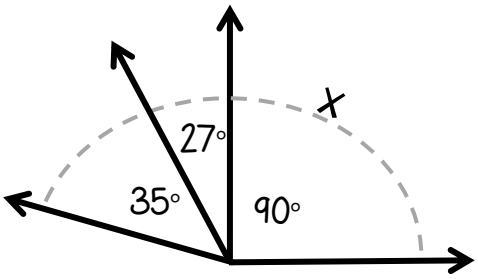
1. Angle x = _____°



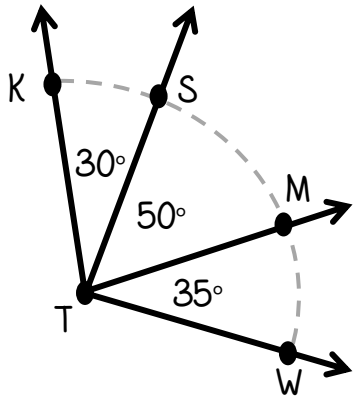
2. Angle x = _____°



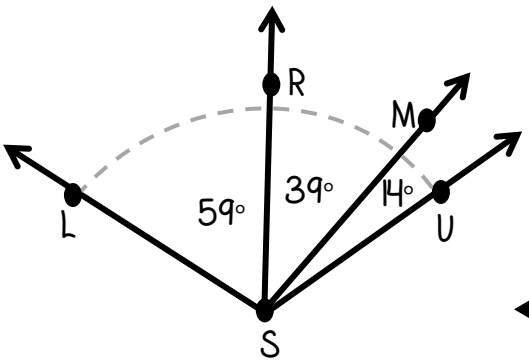
3. Angle x = _____°



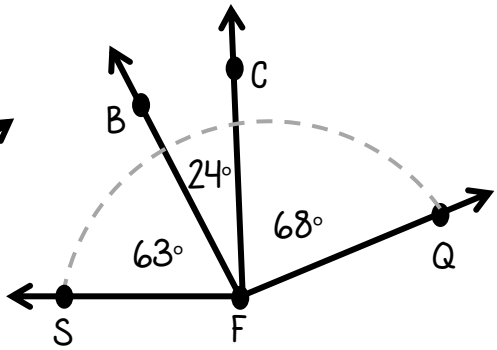
4. $\angle$ KTW = _____°



5. $\angle$ LSU = _____°



6. $\angle$ SFQ = _____°



Name_____

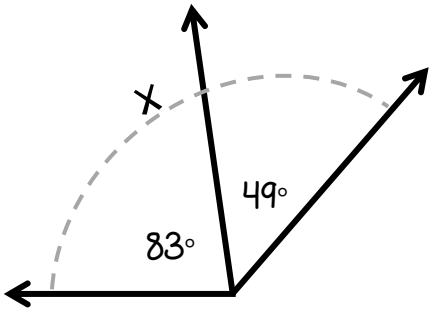
Practice Sheet

4.MD.7
Join angles to determine an angle's measure

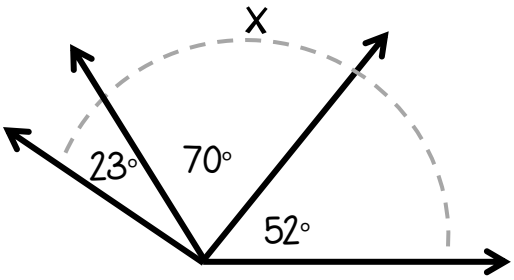
More Practice: Joining Angles

Add to find the measure of the larger angle.

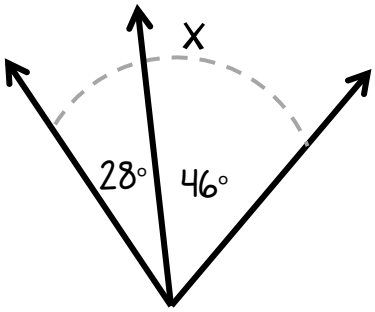
1. Angle x = _____°



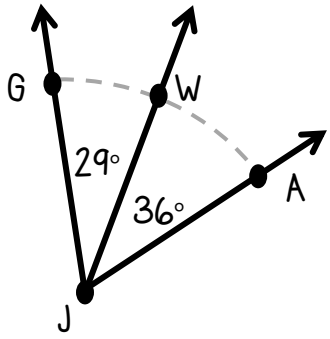
2. Angle x = _____°



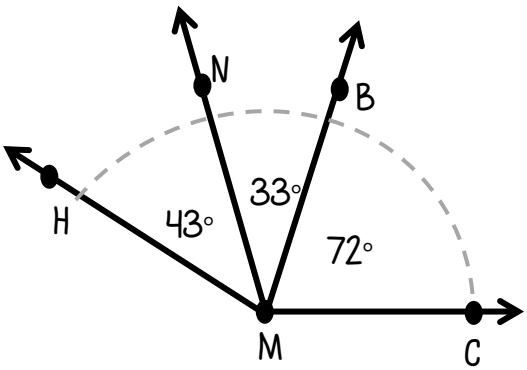
3. Angle x = _____°



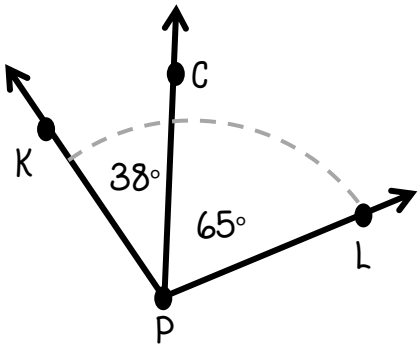
4. ∠ GJA = _____°



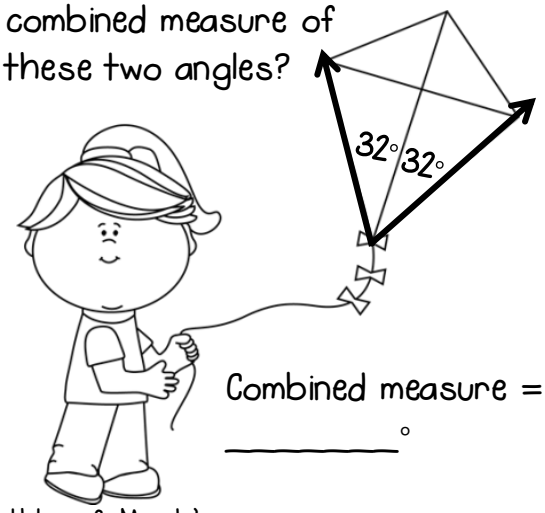
5. ∠ HMC = _____°



6. ∠ KPL = _____°

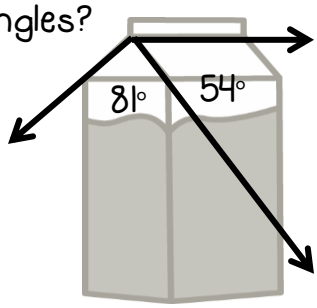


7. Emory measured the two bottom angles of her kite. What is the combined measure of these two angles?



Combined measure = _____°

8. Carter measured the two angles of his milk carton. What is the combined measure of the two angles?



Combined measure = _____°

Name_____

Practice Sheet

4.MD.7

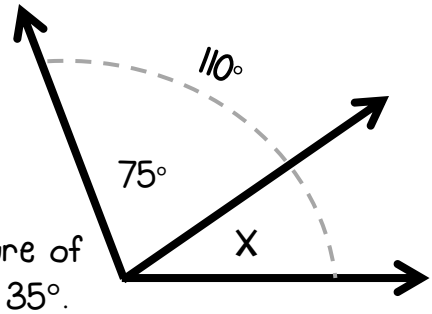
Separate angles to determine an angle's measure

Separating Angles

The measure of an angle equals the sum of its parts. When the measure of the larger angle and one of the smaller angles is known, subtract to determine the measure of the other small unknown angle.

Example 1: 75° + x = 110°

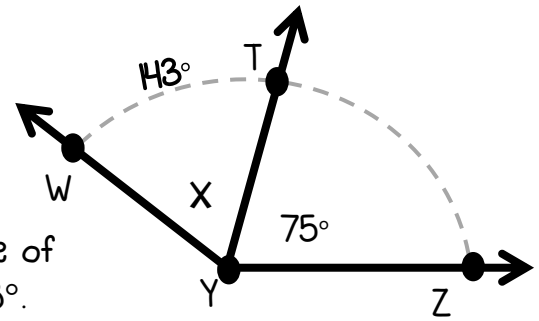
$$\begin{array}{r} 110^\circ \\ -\ 75^\circ \\ \hline 35^\circ \end{array}$$



The measure of angle x is 35°.

Example 2: The measure of angle WYZ is 143°.

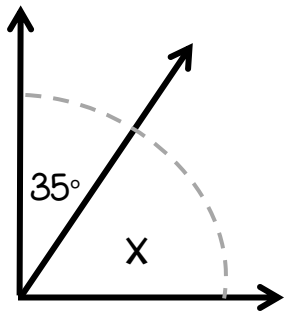
$$\begin{array}{lr} \angle WYZ & 143^\circ \\ \angle TYZ & -\ 75^\circ \\ \hline & 68^\circ \end{array}$$



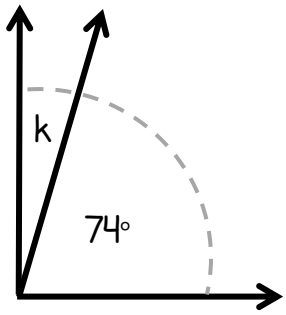
The measure of ∠WYT is 68°.

The combined measure of each angle below is 90°. Find the measure of the unknown angle.

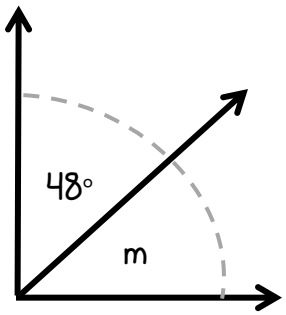
1. Angle x = _____°



2. Angle k = _____°

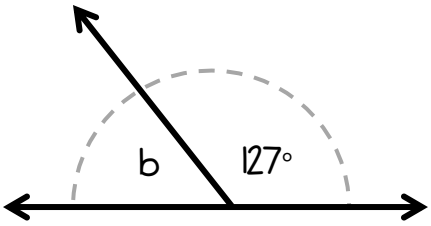


3. Angle m = _____°

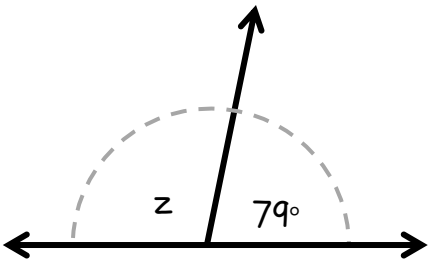


The combined measure of each angle below is 180°. Find the measure of the unknown angle.

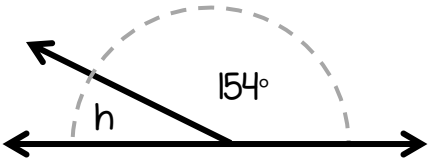
4. Angle b = _____°



5. Angle z = _____°



6. Angle h = _____°



Name_____

Practice Sheet

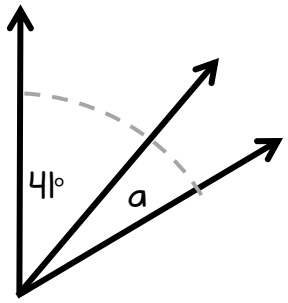
4.MD.7

Separate angles to determine an angle's measure

More Practice: Separating Angles

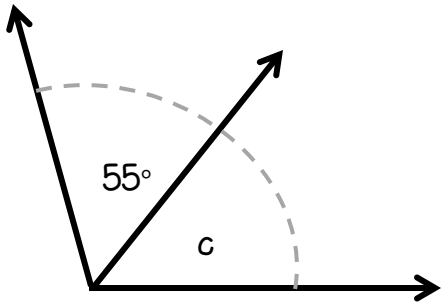
Subtract to find the measure of the unknown angle.

1. The combined angle measure is 60°.



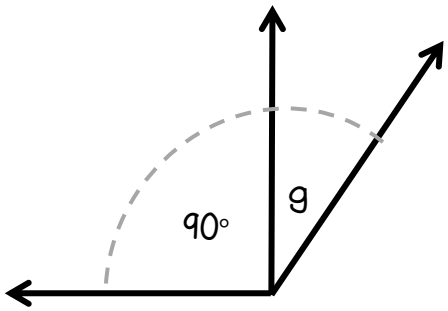
a = _____°

2. The combined angle measure is 105°.



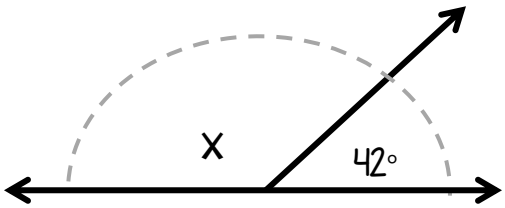
c = _____°

3. The combined angle measure is 124°.



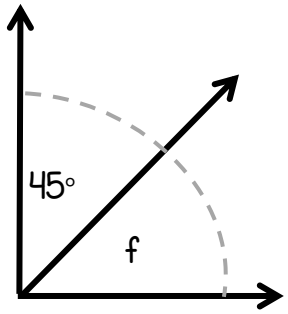
g = _____°

4. The combined angle measure is 180°.



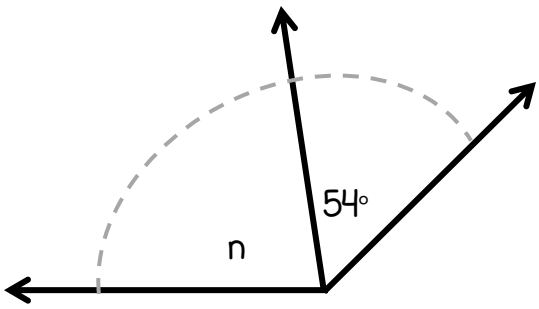
x = _____°

5. The combined angle measure is 90°.



f = _____°

6. The combined angle measure is 136°.



n = _____°

Name_____

Practice Sheet

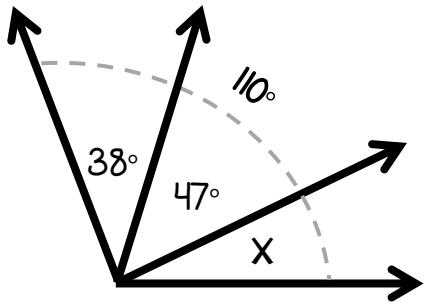
4.MD.7

Separate angles to determine an angle's measure

Separating More Than Two Angles

In the angles below, you must first add the two known smaller angles. Then, subtract this measure from the known combined angle to determine the measure of the unknown angle.

Example 1: 38° + 47° + x = 110°



Step 1: Add the two small known angles.

$$\begin{array}{r} 38° \\ +\ 47° \\ \hline 85° \end{array}$$

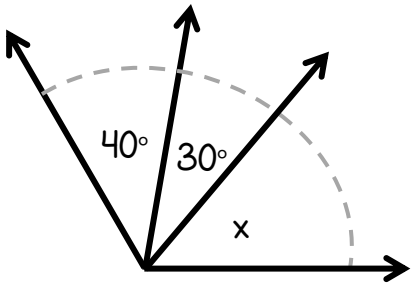
Step 2: Subtract the large angle from this total.

$$\begin{array}{r} 110° \\ -\ 85° \\ \hline 25° \end{array}$$

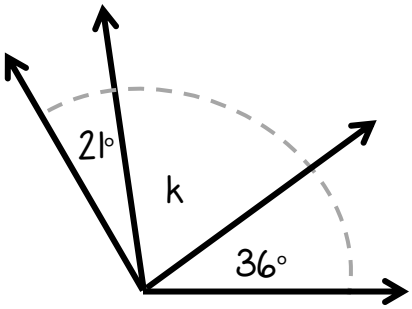
The measure of angle x is 25°.

The combined measure of each angle below is 120°. Find the measure of the unknown angle.

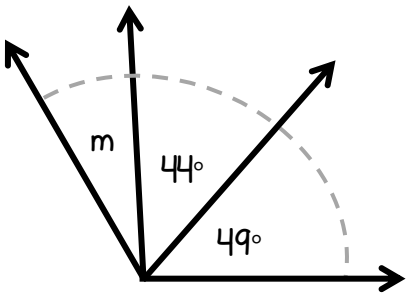
1. Angle x = _____°



2. Angle k = _____°

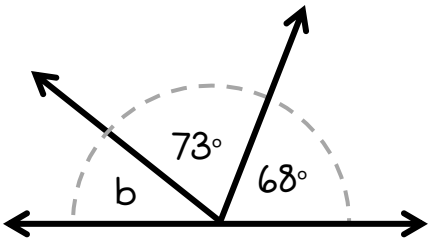


3. Angle m = _____°

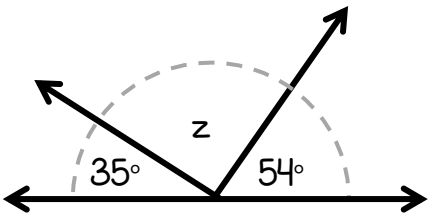


The combined measure of each angle below is 180°. Find the measure of the unknown angle.

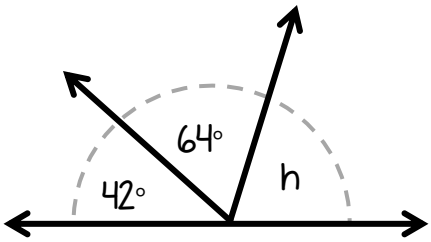
4. Angle b = _____°



5. Angle z = _____°



6. Angle h = _____°



Name_____

Practice Sheet

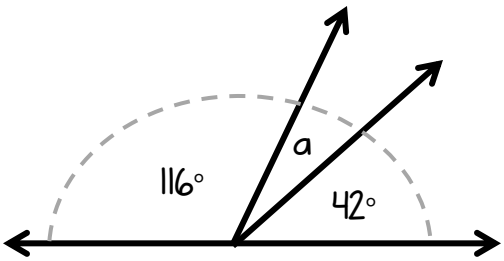
4.MD.7

Separate angles to determine an angle's measure

More Practice: Separating Angles

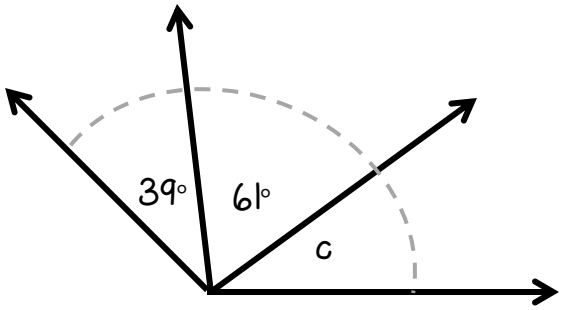
Find the measure of the unknown angle.

1. The combined angle measure is 180°.



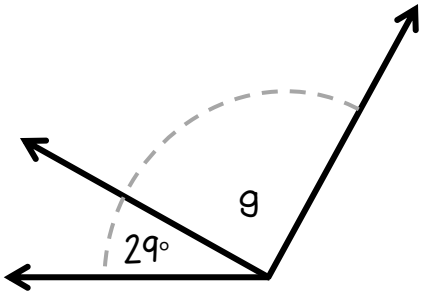
a = _____°

2. The combined angle measure is 135°.



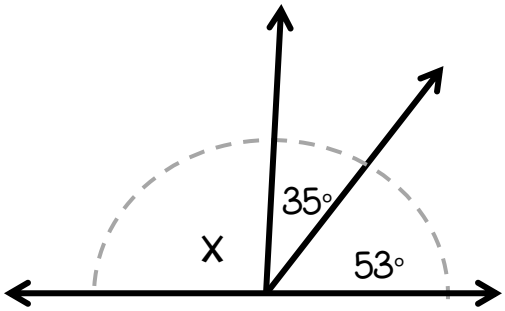
c = _____°

3. The combined angle measure is 118°.



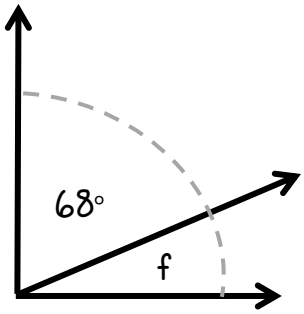
g = _____°

4. The combined angle measure is 180°.



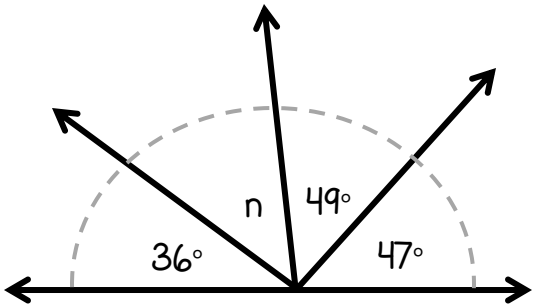
x = _____°

5. The combined angle measure is 90°.



f = _____°

6. The combined angle measure is 180°.



n = _____°

Name_____

Practice Sheet

4.MD.7

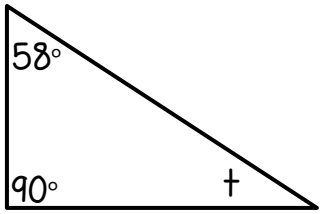
Separate angles to determine an angle's measure in a shape

Additive Angles in Shapes

You can determine the measure of an unknown angle in shapes.

Example 1:
The angles in a triangle add up to 180°.

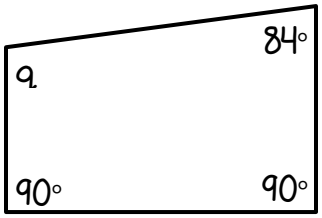
$$\begin{array}{r} 90° \\ +\ 58° \\ \hline 148° \end{array} \qquad \begin{array}{r} 180° \\ -\ 148° \\ \hline 32° \end{array}$$



The measure of angle t = 32°.

Example 2:
The angles in a quadrilateral add up to 360°.

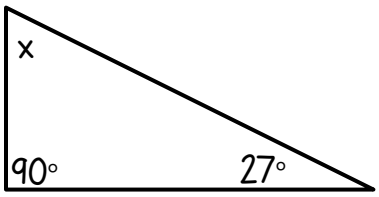
$$\begin{array}{r} 90° \\ 90° \\ +\ 84° \\ \hline 264° \end{array} \qquad \begin{array}{r} 360° \\ -\ 264° \\ \hline 96° \end{array}$$



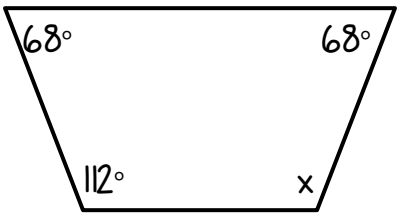
The measure of angle q = 96°.

Find the measure of the unknown angle.

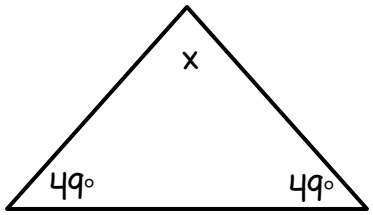
1. x = _____°



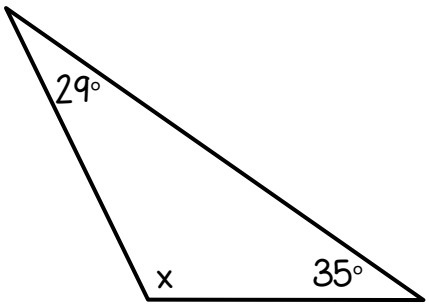
2. x = _____°



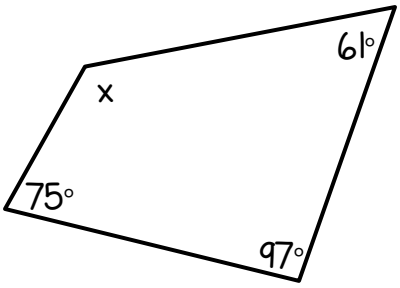
3. x = _____°



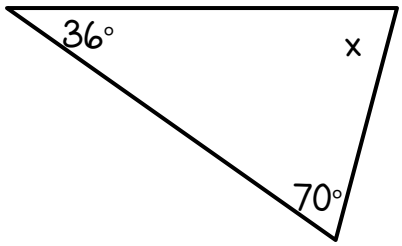
4. x = _____°



5. x = _____°



6. x = _____°



Name_____

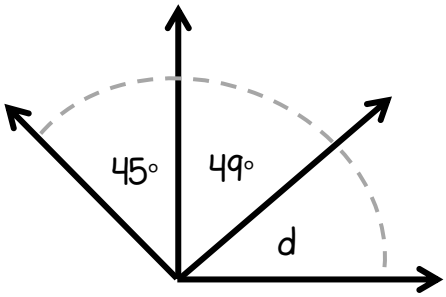
Practice Sheet

4.MD.7
Separate angles to determine an angle's measure

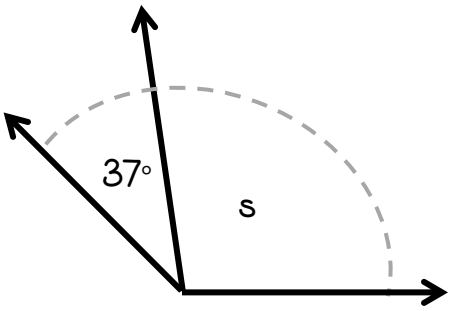
Put It All Together: Separate Angles

The combined measure of each angle below is 120°. Find the measure of the unknown angle.

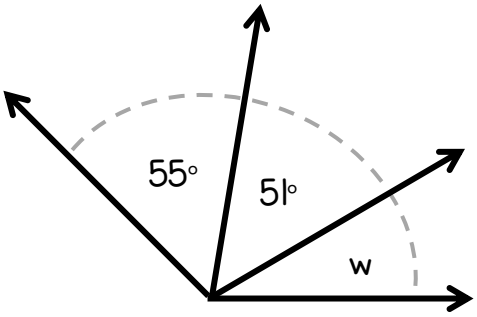
1. Angle d = _____°



2. Angle s = _____°

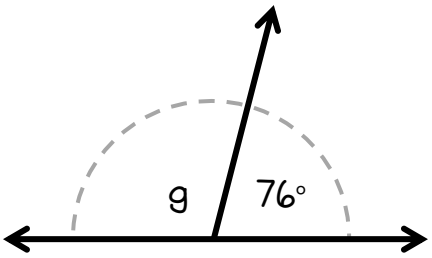


3. Angle w = _____°

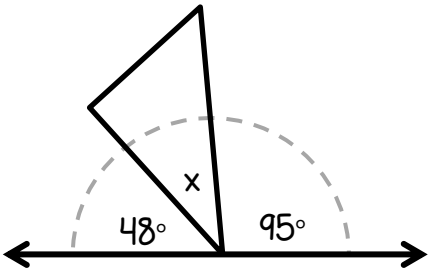


The combined measure of each angle below is 180°. Find the measure of the unknown angle.

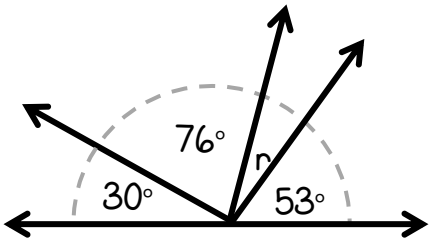
4. Angle g = _____°



5. Angle x = _____°



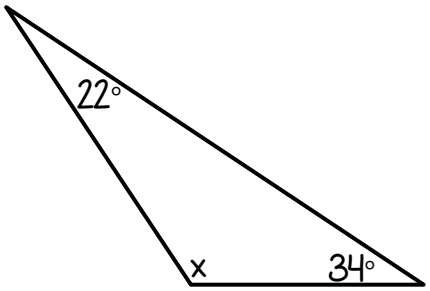
6. Angle r = _____°



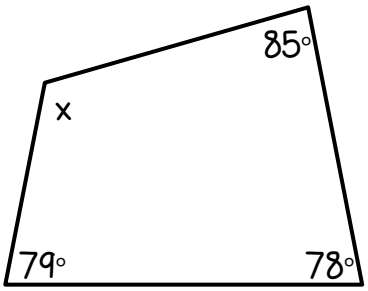
Find the measure of the unknown angle x in each shape below.

- A triangle has a combined angle measure of 180°.
- A quadrilateral has a combined angle measure of 360°.

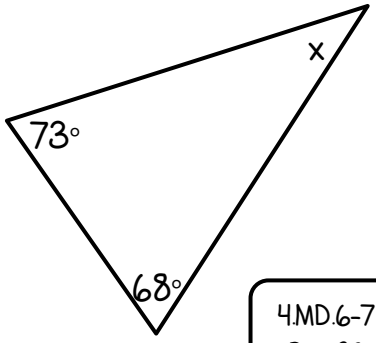
7. x = _____°



8. x = _____°



9. x = _____°



Name_____

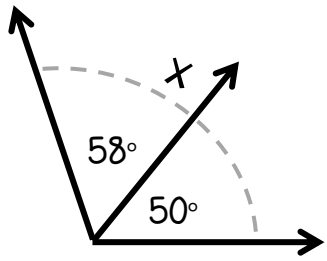
Practice Sheet

4.MD.7
Join and separate angles to determine an angle's measure

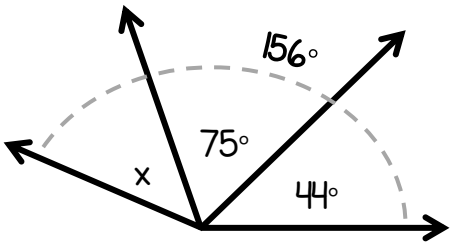
Put It All Together: Join & Separate Angles

Find the measure of the angle x.

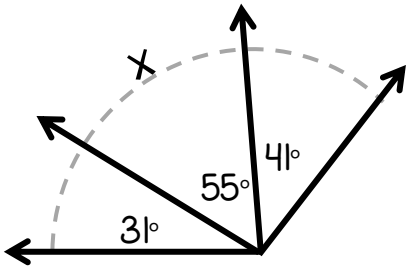
1. Angle x = _____°



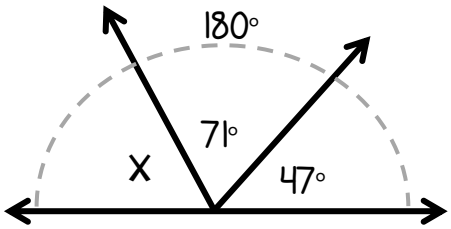
2. Angle x = _____°



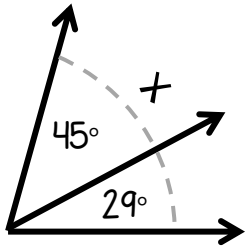
3. Angle x = _____°



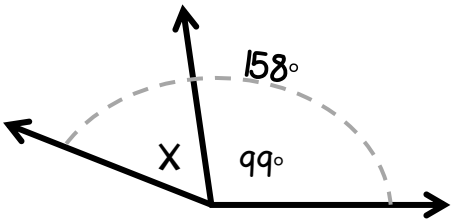
4. Angle x = _____°



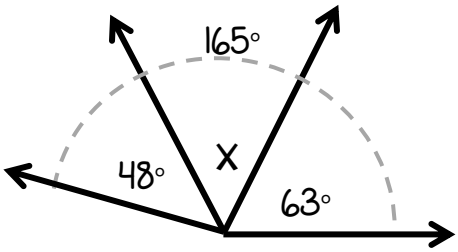
5. Angle x = _____°



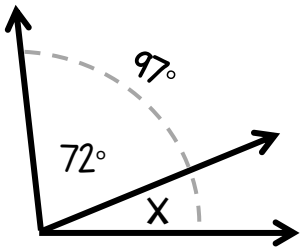
6. Angle x = _____°



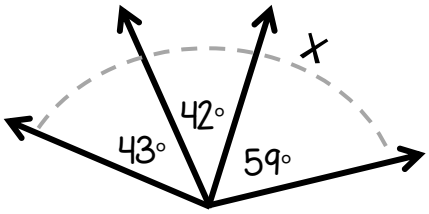
7. Angle x = _____°



8. Angle x = _____°



9. Angle x = _____°



Thank You!

Thank you for your purchase. Please let us know if you have any questions or comments (teachershelpingteachers77@gmail.com).

If you get a chance, we would love to hear your feedback on this product!

☺ thanks, Kathleen and Mande'

Answer keys follow this page!

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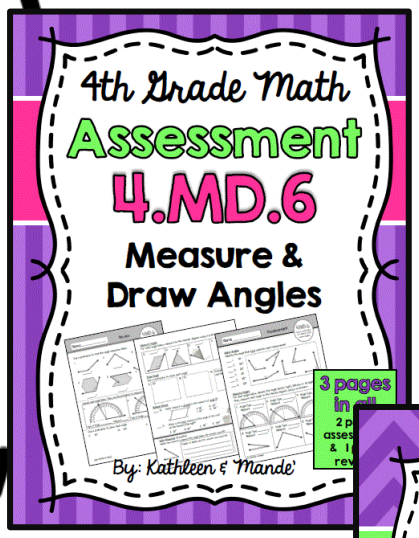

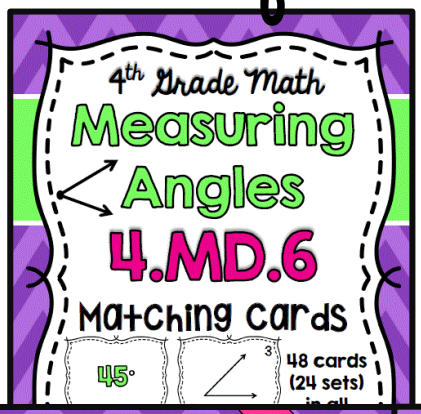

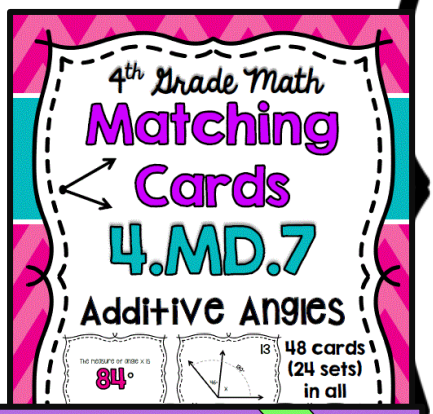

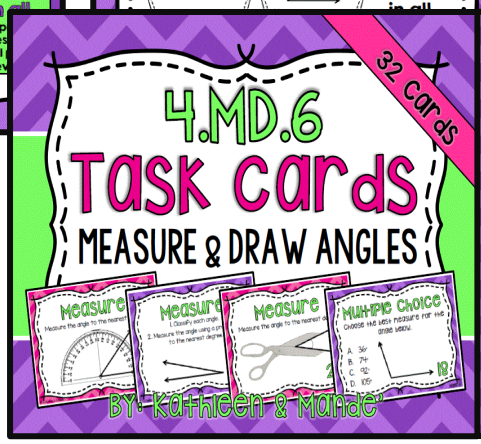

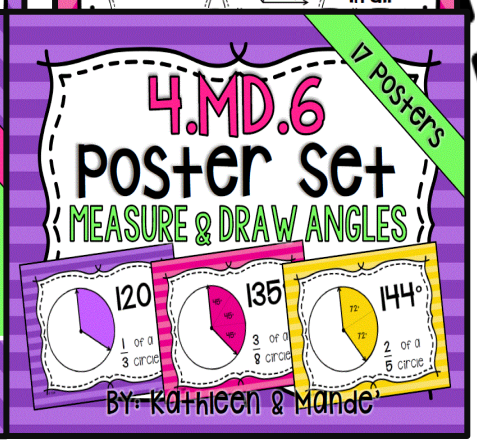

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Name Answer Key

Practice Sheet

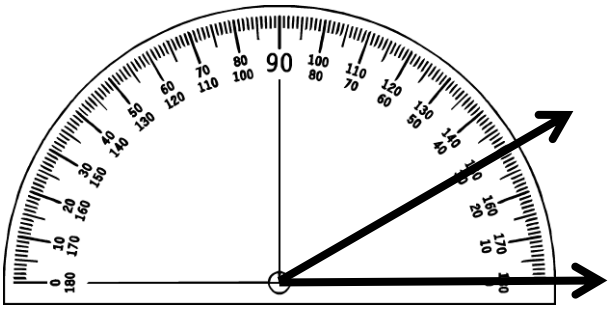
4.MD.6
Reading a protractor to measure angles
(Nearest 10°)

Reading a Protractor

A protractor is a tool used to measure angles (in degrees).
When using a protractor, it is important to first classify the angle:

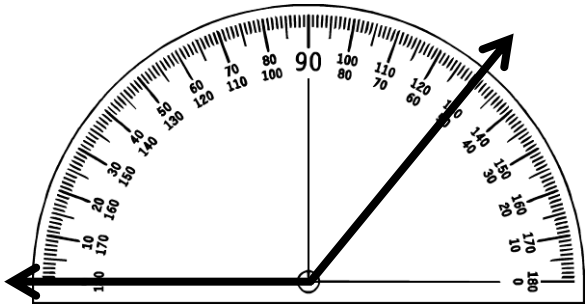
- Acute angle ~ This angle should have a measure less than 90°.
- Obtuse angle ~ This angle should have a measure greater than 90°.

Angle 1 is an acute angle.
- The measure must be less than 90°.



The ray lands on the 30° and 150° mark.
Angle 1 is acute, so the measure is 30°.

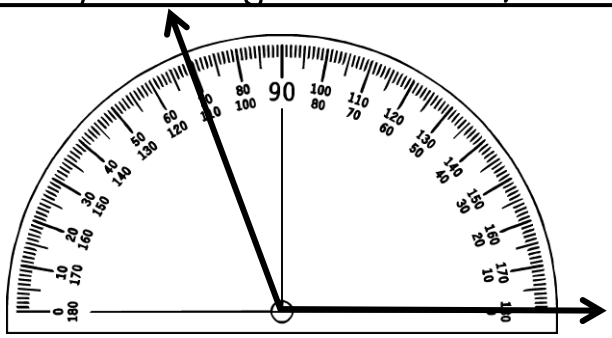
Angle 2 is an obtuse angle.
- The measure must be more than 90°.



The ray lands on the 50° and 130° mark.
Angle 2 is obtuse, so the measure is 130°.

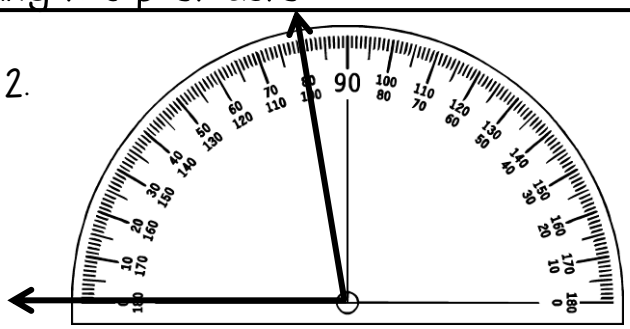
Classify each angle below. Then, measure using the protractor.

1.



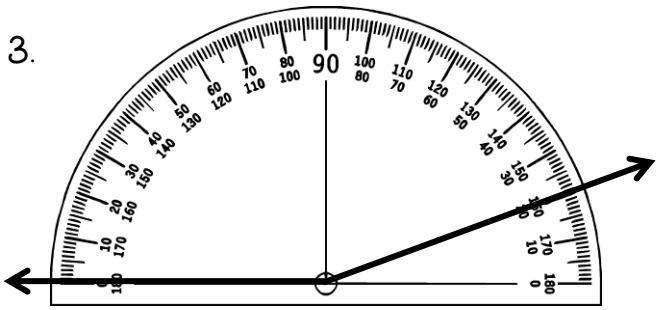
Type of Angle obtuse Measure 110°

2.



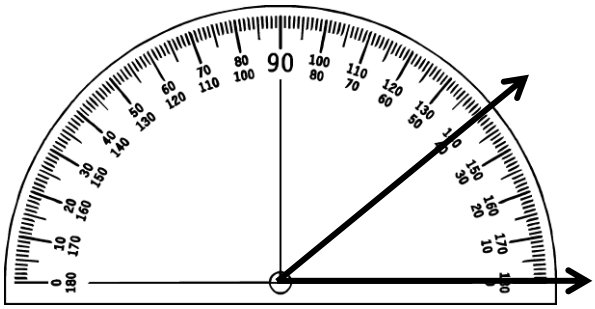
Type of Angle acute Measure 80°

3.



Type of Angle obtuse Measure 160°

4.



Type of Angle acute Measure 40°

Name Answer Key

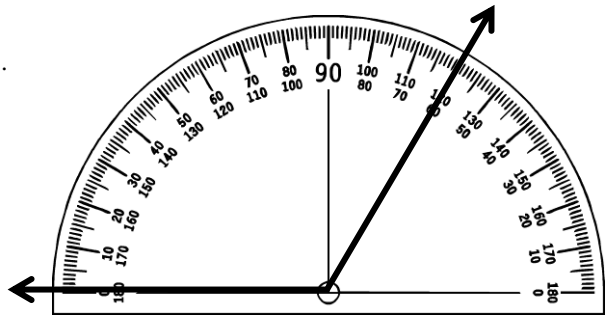
Practice Sheet

4.MD.6
Reading a protractor to measure angles
(Nearest 5°)

Reading a Protractor: More Practice

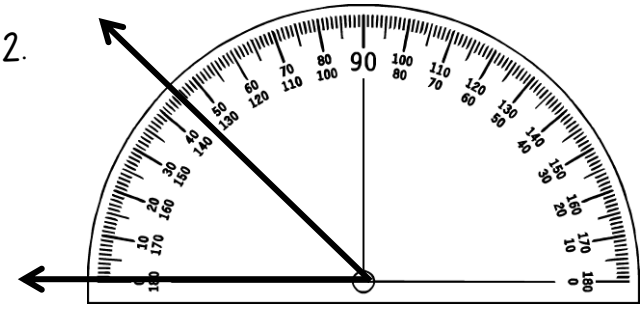
Classify each angle below. Then, use the protractor to measure the angle.

1.



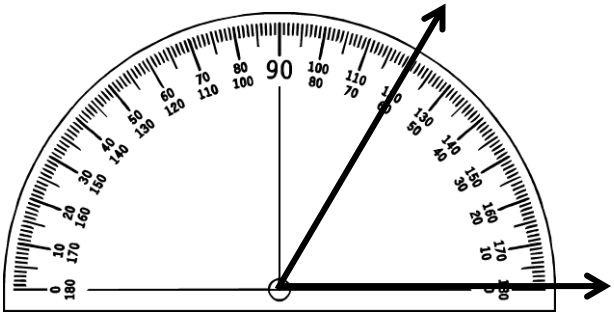
Type of Angle obtuse Measure 120°

2.



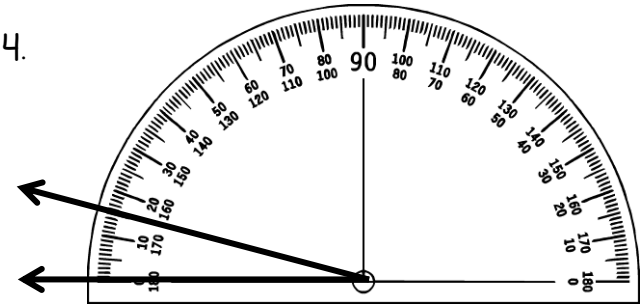
Type of Angle acute Measure 45°

3.



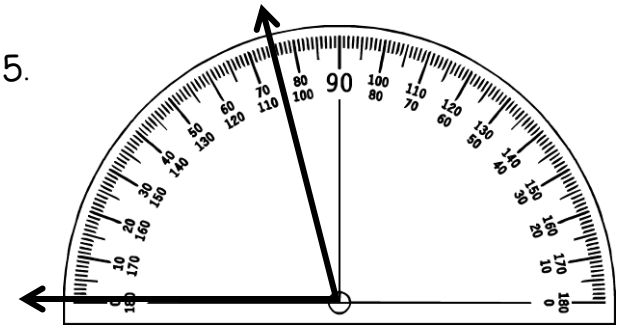
Type of Angle acute Measure 60°

4.



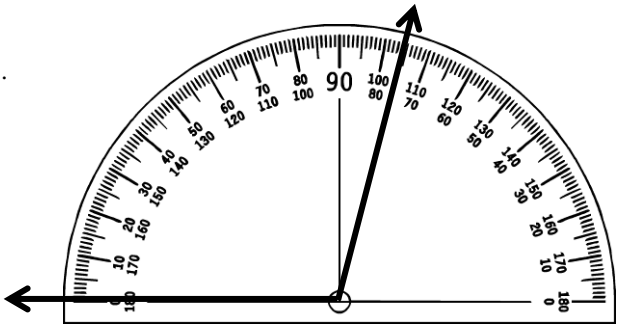
Type of Angle acute Measure 15°

5.



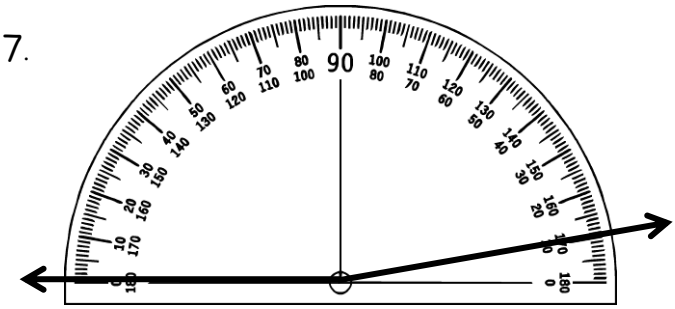
Type of Angle acute Measure 75°

6.



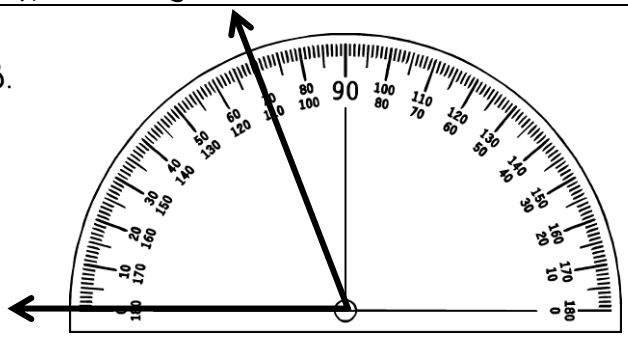
Type of Angle obtuse Measure 105°

7.



Type of Angle obtuse Measure 170°

8.



Type of Angle acute Measure 70°

Name Answer Key

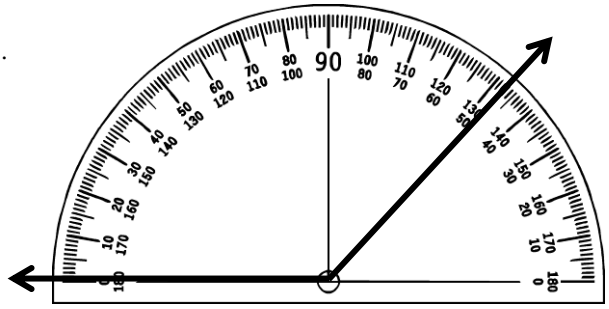
Practice Sheet

4.MD.6
Reading a protractor to measure angles
(Nearest 1°)

Reading a Protractor: More Practice

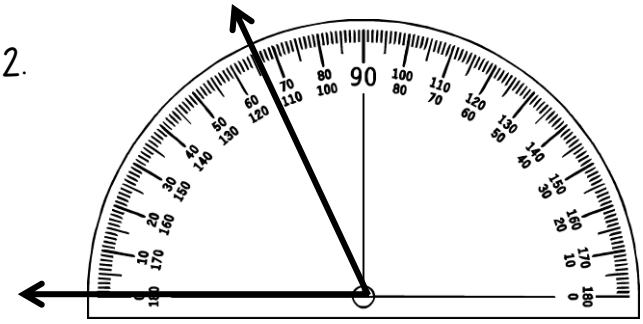
Classify each angle below. Then, use the protractor to measure the angle.

1.



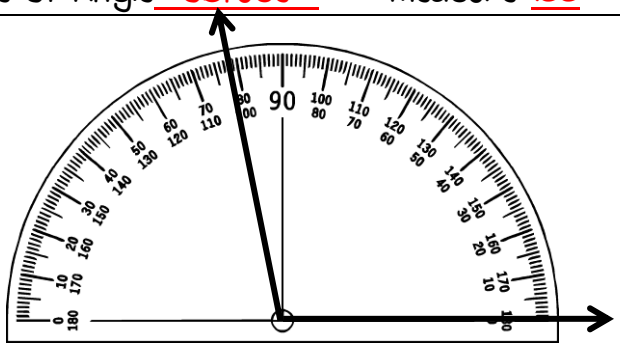
Type of Angle obtuse Measure 133°

2.



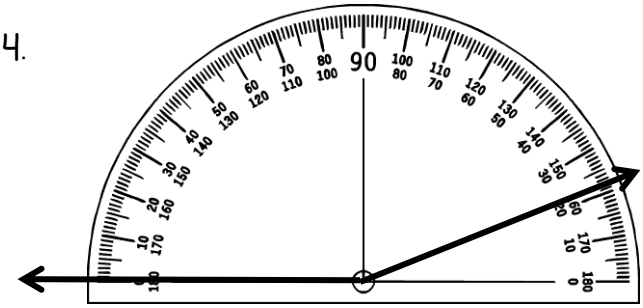
Type of Angle acute Measure 66°

3.



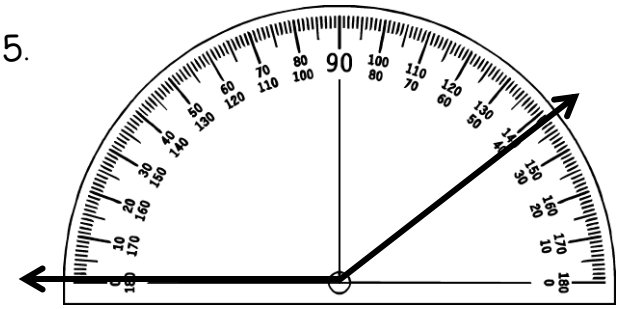
Type of Angle obtuse Measure 102°

4.



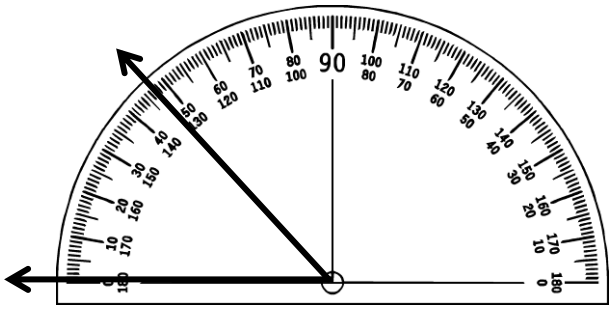
Type of Angle obtuse Measure 158°

5.



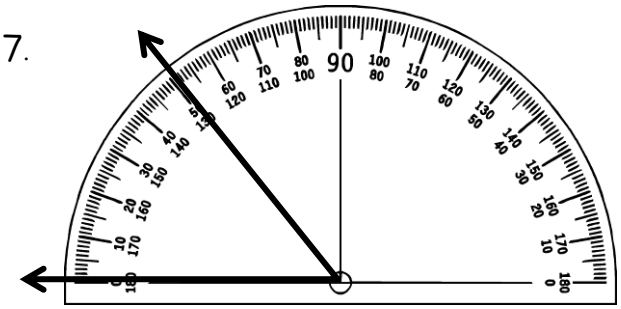
Type of Angle obtuse Measure 142°

6.



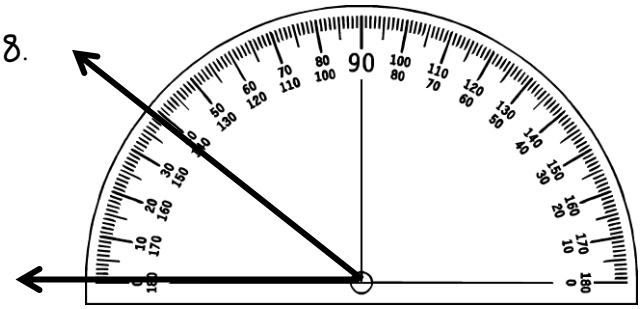
Type of Angle acute Measure 47°

7.



Type of Angle acute Measure 51°

8.



Type of Angle acute Measure 39°

Name Answer Key

Practice Sheet

4.MD.6
Using a protractor to measure angles

Measuring Angles

A protractor is a tool used to measure angles (in degrees). The box below shows the steps to follow when using a protractor.

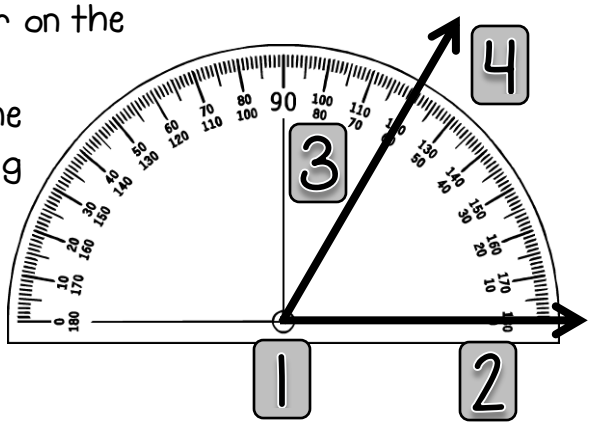
Step 1: Place the center point of the protractor on the vertex of the angle.

Step 2: One ray of the angle should be along the straight edge of the protractor pointing at the 0° mark.

Step 3: Find the mark on the protractor that aligns with the angle's second ray.

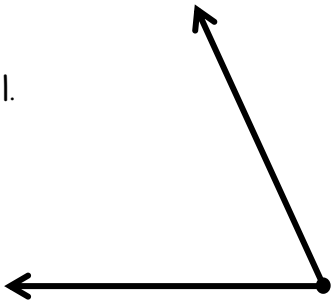
Step 4: Read the angle measure.

*The ray points at both 60° and 120°.
Since the angle is acute, the correct measure is 60°.



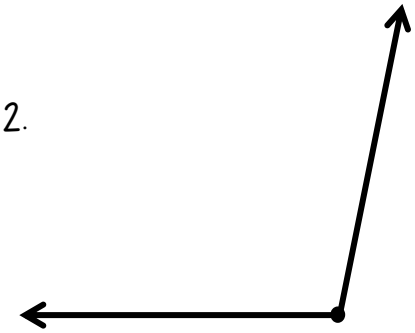
Use a protractor to find the angle measures below.

1.



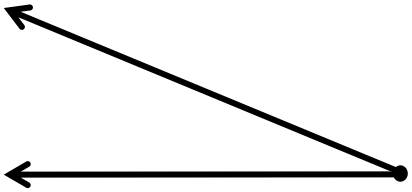
65°

2.



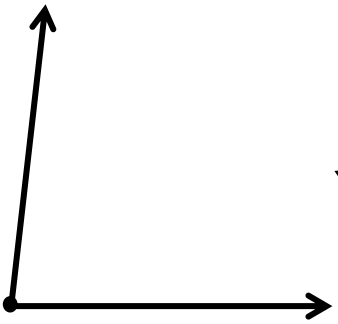
102°

3.



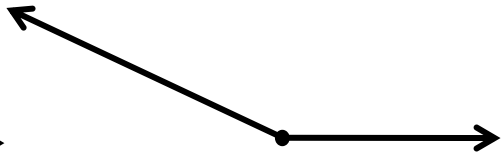
22°

4.



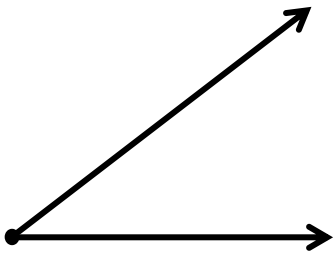
83°

5.



155°

6.



38°

Name Answer Key

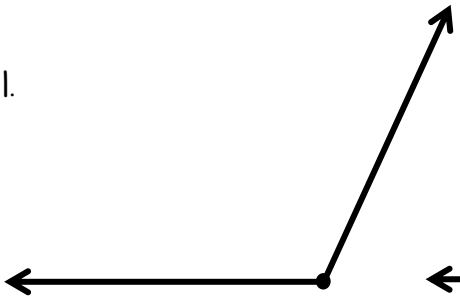
Practice Sheet

4.MD.6
Using a protractor to measure angles

Measuring Angles: More Practice

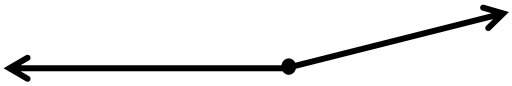
Use a protractor to find the angle measures below.

1.



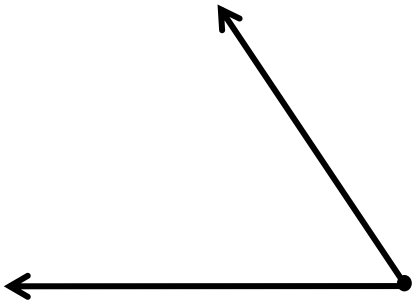
115°

2.



165°

3.

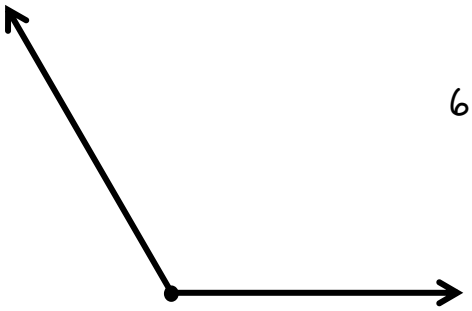


56°

4.

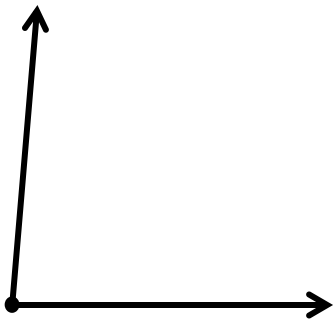
8°

5.



120°

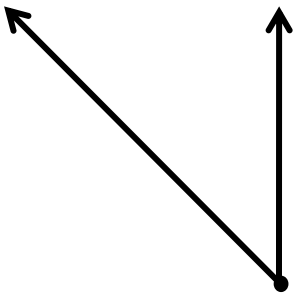
6.



85°

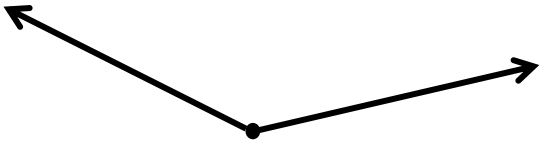
For the angles below, you will need to turn your protractor so that one ray points to the 0° mark. Then, measure.

7.



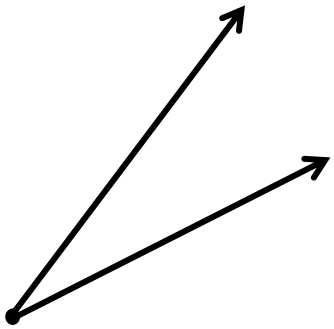
45°

8.



141°

9.



28°

Name Answer Key

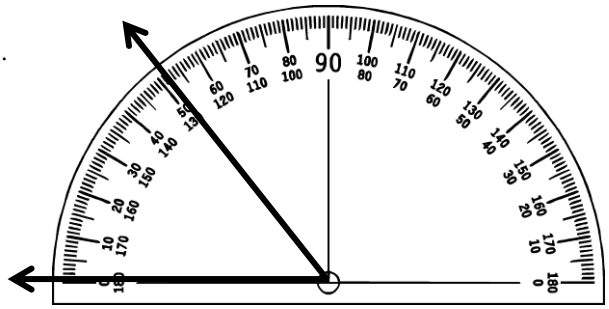
Practice Sheet

4.MD.6
Using a protractor to measure angles

Put It All Together: Measuring Angles

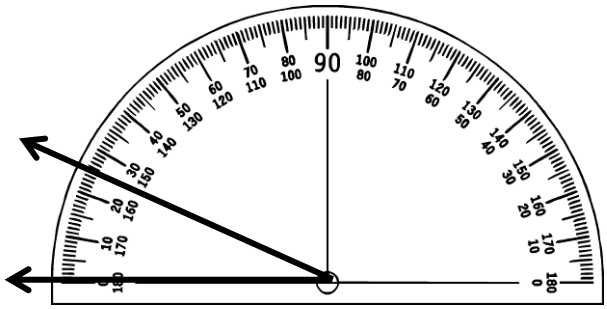
Classify each angle below. Then, use the protractor to measure the angle.

1.



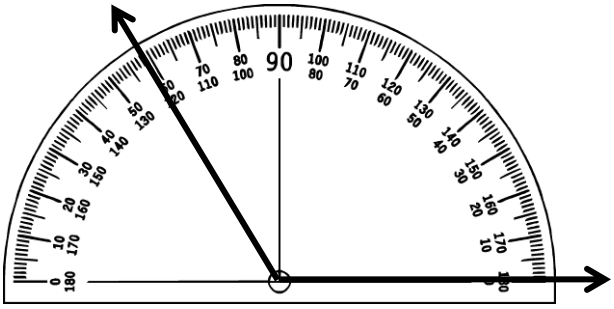
Type of Angle acute Measure 51°

2.



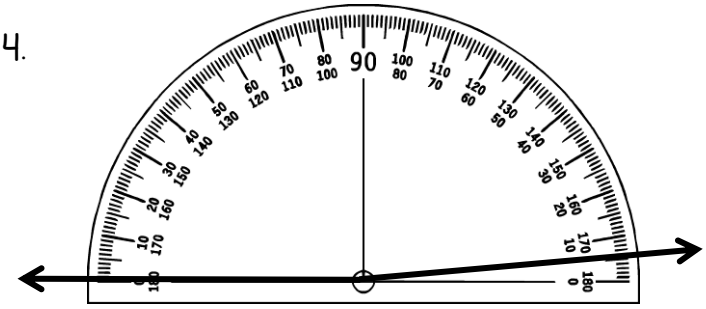
Type of Angle acute Measure 25°

3.



Type of Angle obtuse Measure 121°

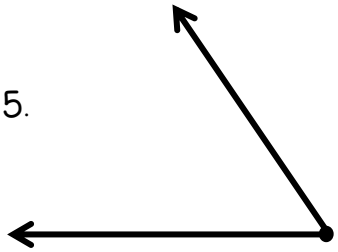
4.



Type of Angle obtuse Measure 175°

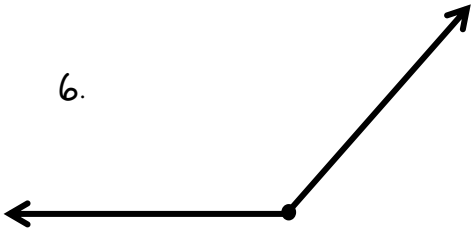
Use a protractor to find the angle measures below.

5.



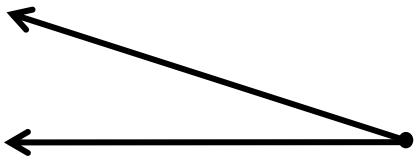
56°

6.



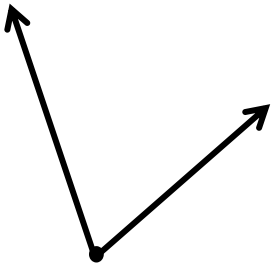
131°

7.



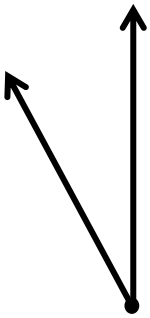
18°

8.



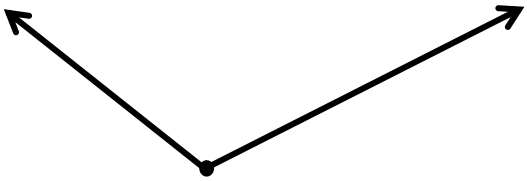
68°

9.



28°

10.



115°

Name Answer Key

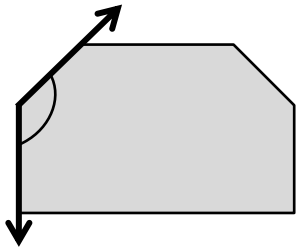
Practice Sheet

4.MD.6
Using a protractor to measure angles in shapes

Measuring Angles: Shapes

Each shape below has an angle featured.
First, classify the angle. Then, use a protractor to find the measure of the angle.

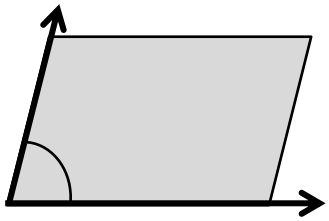
Ex:



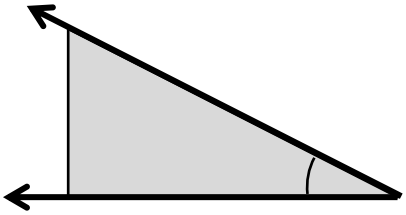
Type of angle obtuse

Measure 135°

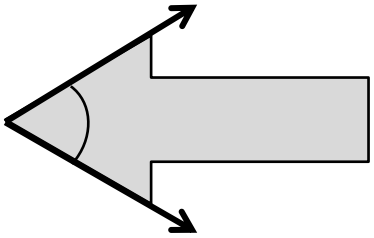
1. Type of Angle acute
Measure 75°



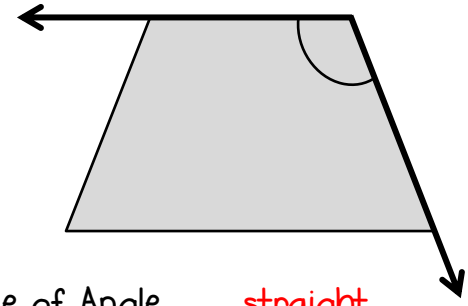
2. Type of Angle acute
Measure 28°



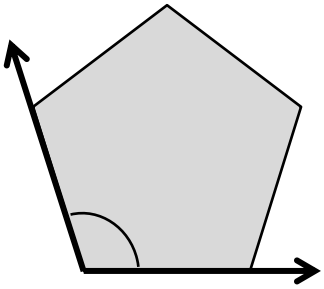
3. Type of Angle acute
Measure 62°



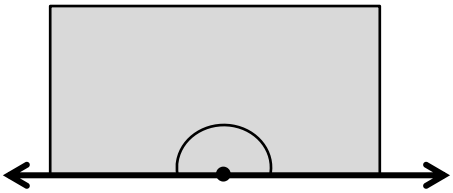
4. Type of Angle obtuse
Measure 112°



5. Type of Angle obtuse
Measure 108°



6. Type of Angle straight
Measure 180°



Name Answer Key

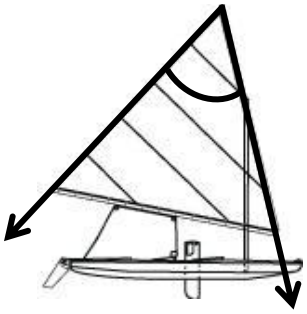
Practice Sheet

4.MD.6
Using a protractor to measure angles

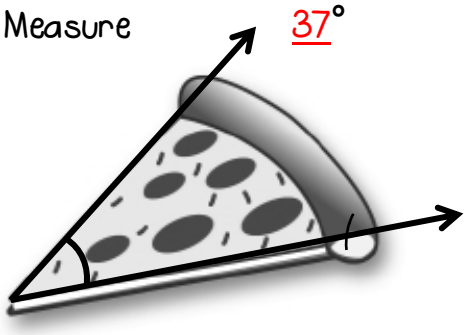
Measuring Angles: Real-Life Objects

Each picture below has an angle featured.
First, classify the angle. Then, use a protractor to find the measure of the angle.

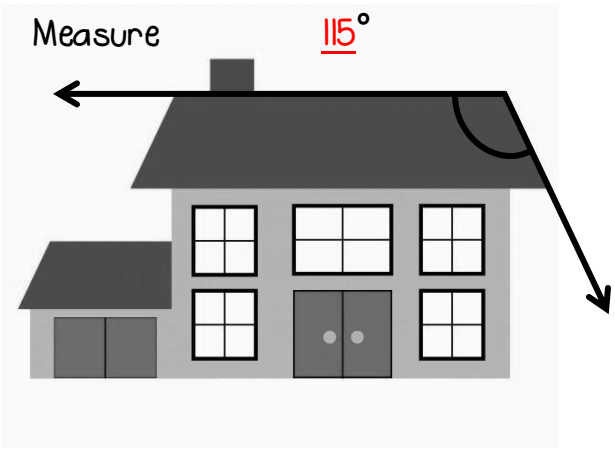
1. Type of Angle acute
Measure 57°



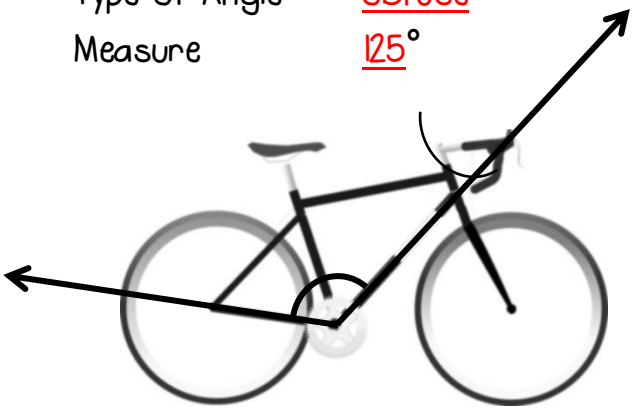
2. Type of Angle acute
Measure 37°



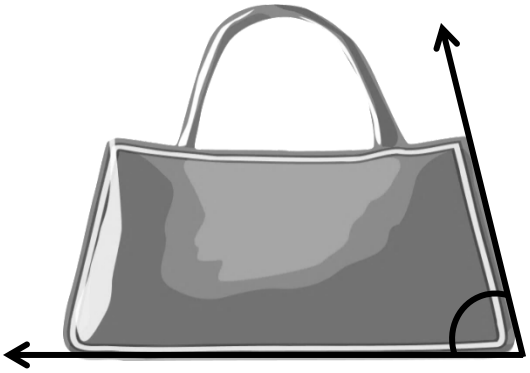
3. Type of Angle obtuse
Measure 115°



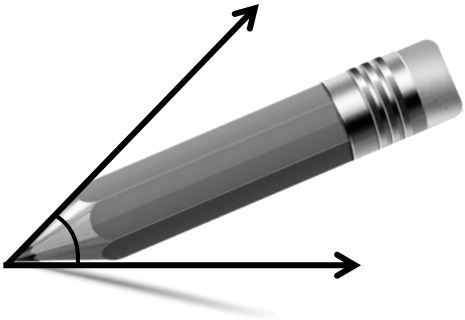
4. Type of Angle obtuse
Measure 125°



5. Type of Angle acute
Measure 76°



6. Type of Angle acute
Measure 45°



Name Answer Key

Practice Sheet

4.MD.6
Using a protractor to draw angles

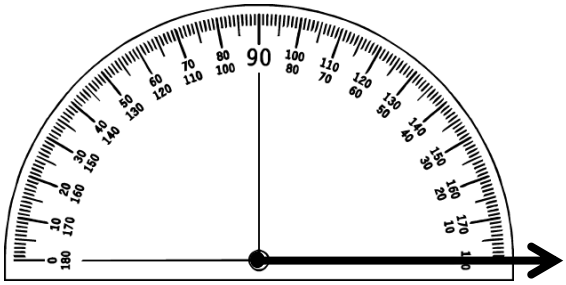
Draw Angles

Now that you know how to use a protractor to measure angles, you can use a protractor to draw angles. Follow the steps below.

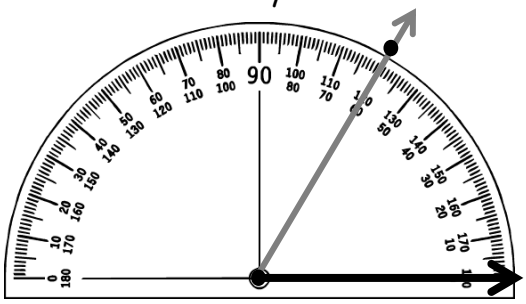
Example: Draw an angle that measures 60°.

Step 1:
Draw a ray and mark an endpoint.

Step 2:
Place the protractor on the ray just as you would when you measure an angle.

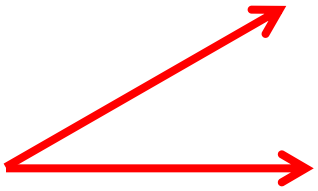


Step 3:
On the protractor, find 60° and make a mark.
Now draw a ray to connect it.

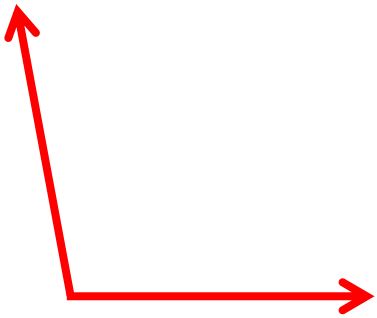


Use a protractor to draw the angle.

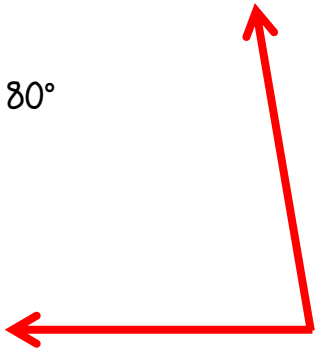
1. 30°



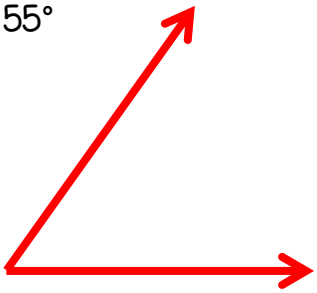
2. 100°



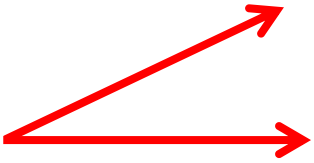
3. 80°



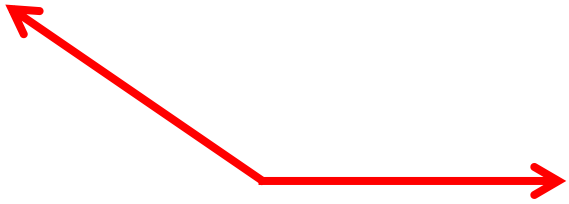
4. 55°



5. 25°



6. 145°



Name Answer Key

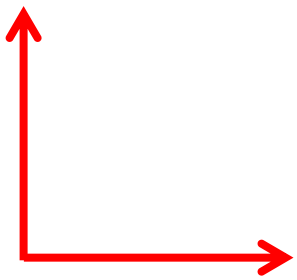
Practice Sheet

4.MD.6
Using a protractor to draw angles

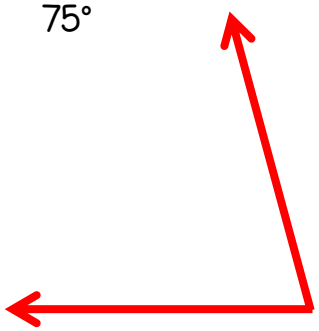
Draw Angles: More Practice

Use a protractor to draw the angle.

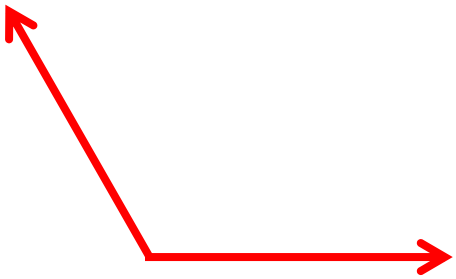
1. 90°



2. 75°

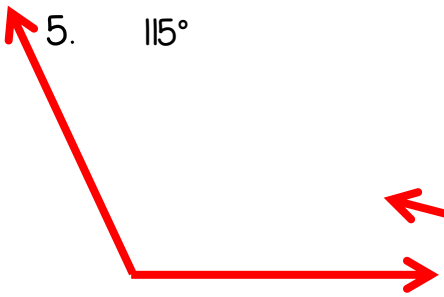


3. 120°



4. 10°

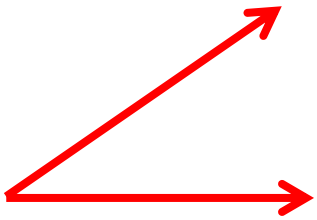
5. 115°



6. 165°

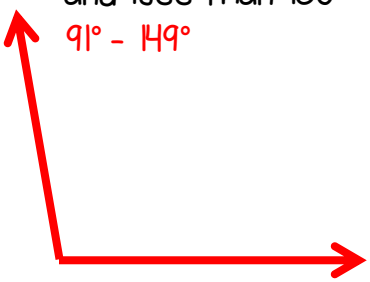
Draw an angle that is described by the given measurements.
Then, measure and classify the angle (acute, right, obtuse, or straight).
Answers will vary.

7. Greater than 30° and less than 40°
31° - 39°



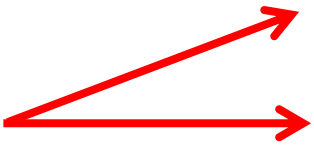
Measure 35°
Angle type acute

8. Greater than 90° and less than 150°
91° - 149°



Measure 100°
Angle type obtuse

9. Less than 120°
1° - 119°



Measure 20°
Angle type acute

Name Answer Key

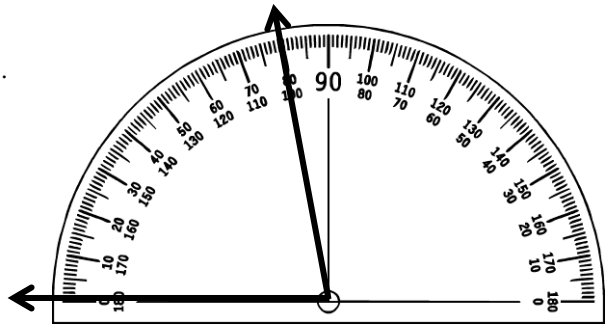
Practice Sheet

4.MD.6
Using a protractor to measure & draw angles

Put It All Together: Measure & Draw Angles

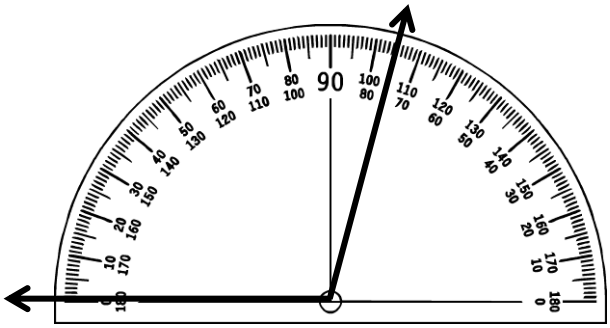
Classify each angle below. Then, use the protractor to measure the angle.

1.



Type of Angle acute Measure 80°

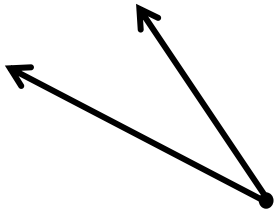
2.



Type of Angle obtuse Measure 105°

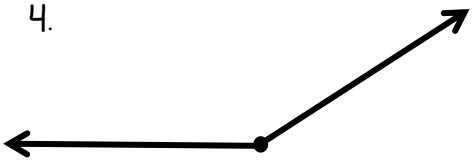
Use a protractor to find the angle measures below.

3.



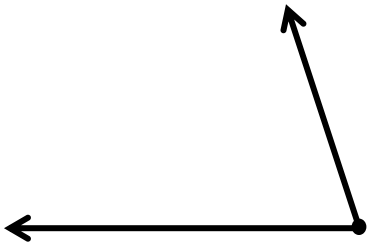
30°

4.



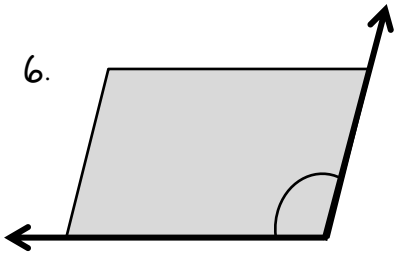
147°

5.



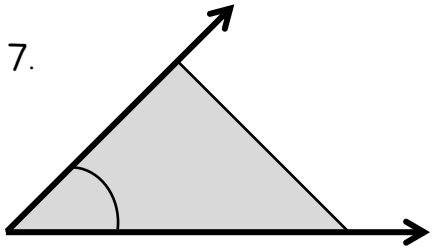
72°

6.



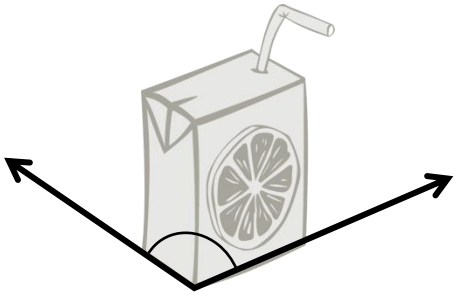
105°

7.



45°

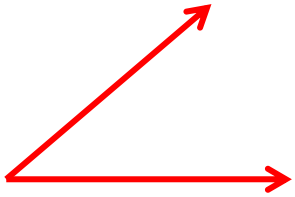
8.



122°

Use a protractor to draw each angle.

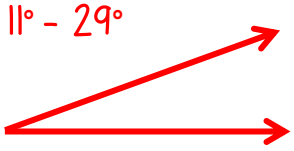
9. 40°



10. 155°

11. Greater than 10° and less than 30°

11° - 29°



Name Answer Key

Practice Sheet

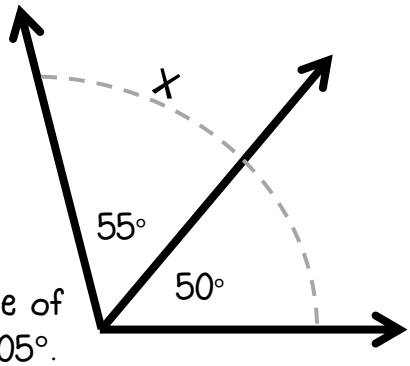
4.MD.7
Join angles to determine an angle's measure

Joining Angles

Two angles can be joined to form a larger angle. To determine the measure of the larger angle, add the two angle measures.

Example 1:

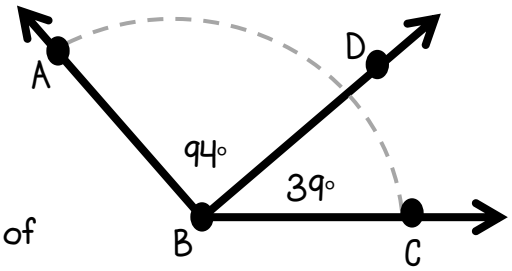
55°
+ 50°
105°



The measure of angle x is 105°.

Example 2:

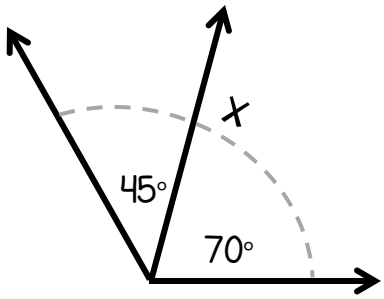
∠ABD 94°
∠DBC + 39°
133°



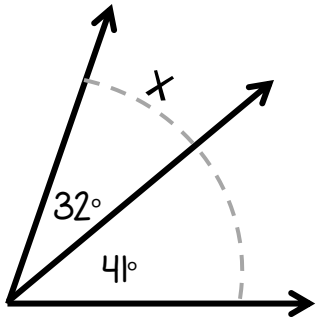
The measure of ∠ABC is 133°.

Add to find the measure of the larger angle.

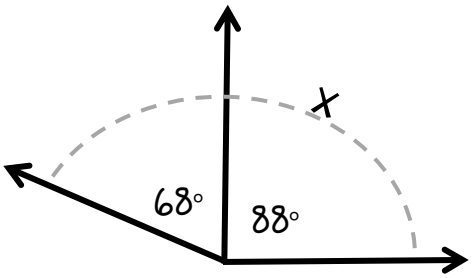
1. Angle x = 115°



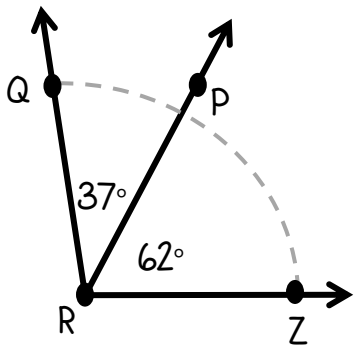
2. Angle x = 73°



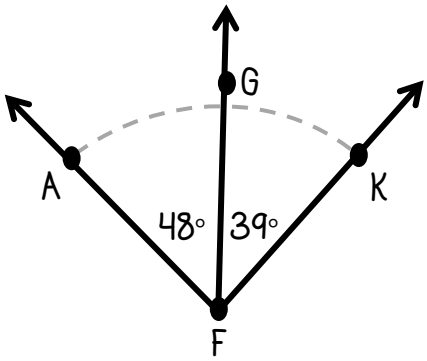
3. Angle x = 156°



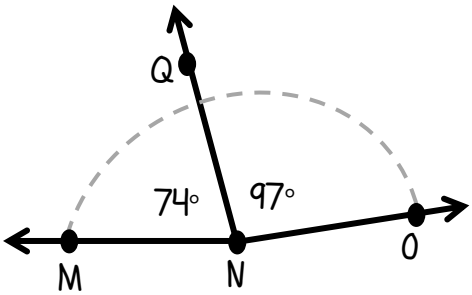
4. ∠ QRZ = 99°



5. ∠ AFK = 87°



6. ∠ MNO = 171°



Name Answer Key

Practice Sheet

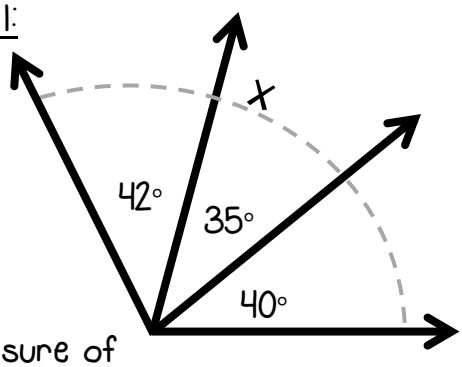
4.MD.7
Join angles to determine an angle's measure

Joining More than Two Angles

More than two angles can be joined to form a larger angle. To determine the measure of the larger angle, add all angle measures.

Example 1:

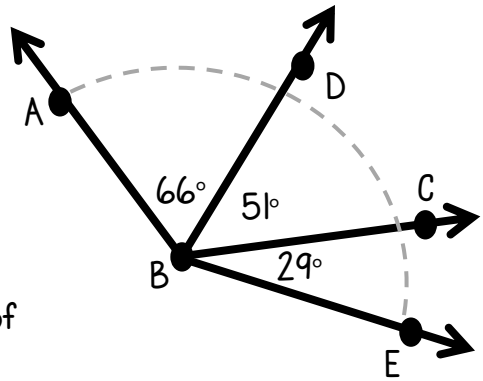
42°
35°
+ 40°
117°



The measure of angle x is 117°.

Example 2:

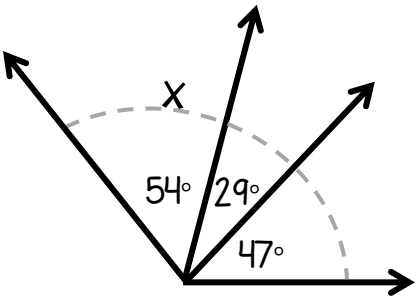
∠ABD 66°
∠DBC 51°
∠CBE + 29°
146°



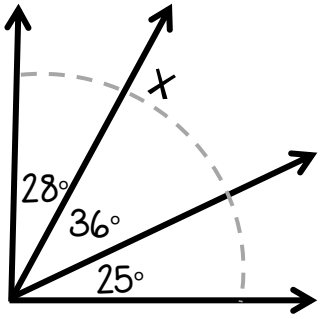
The measure of ∠ABE is 146°.

Add to find the measure of the larger angle.

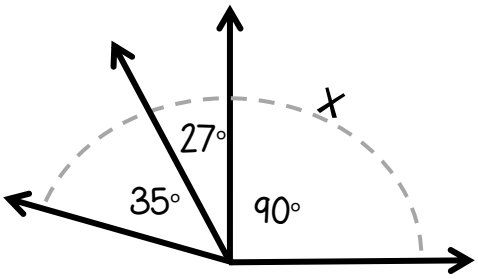
1. Angle x = 130°



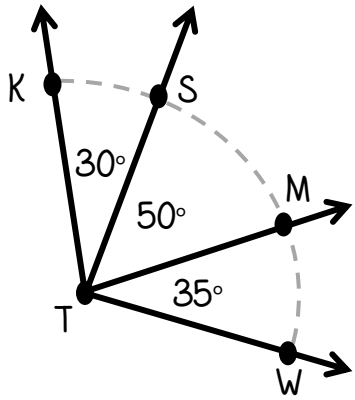
2. Angle x = 89°



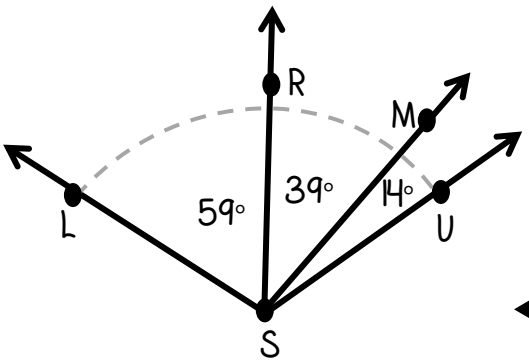
3. Angle x = 152°



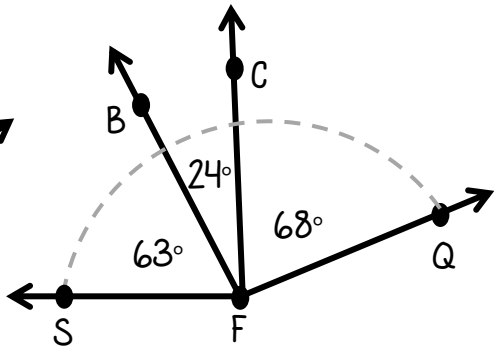
4. ∠ KTW = 115°



5. ∠ LSU = 112°



6. ∠ SFQ = 155°



Name Answer Key

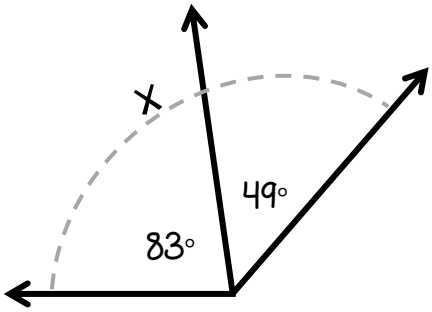
Practice Sheet

4.MD.7
Join angles to determine an angle's measure

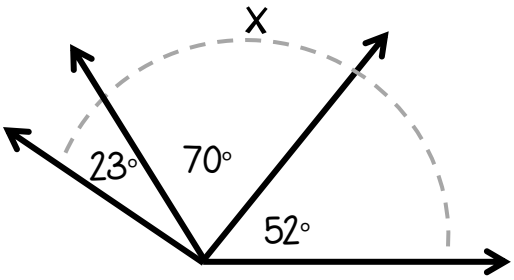
More Practice: Joining Angles

Add to find the measure of the larger angle.

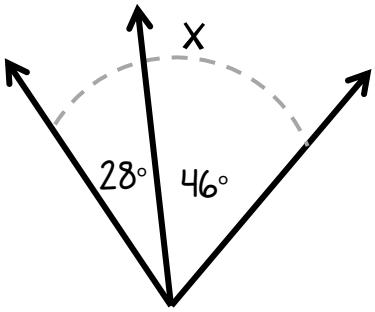
1. Angle x = 132°



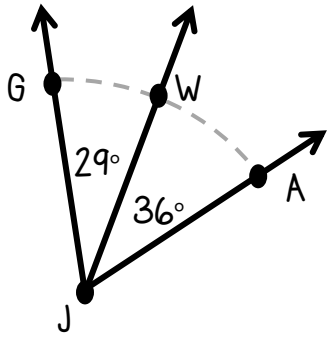
2. Angle x = 145°



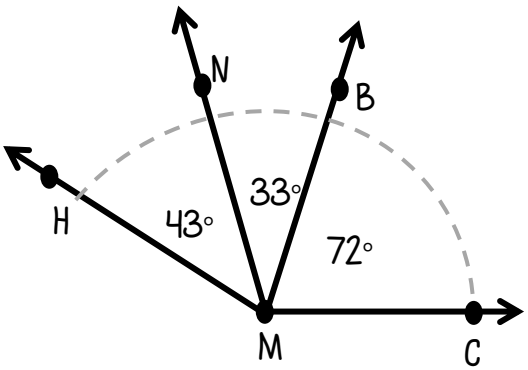
3. Angle x = 74°



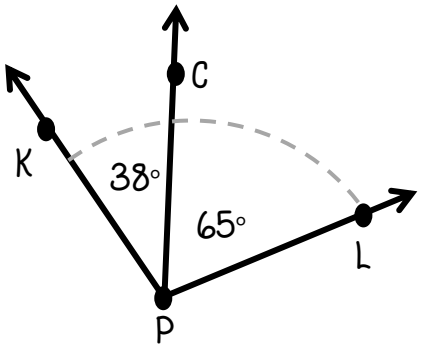
4. ∠ GJA = 65°



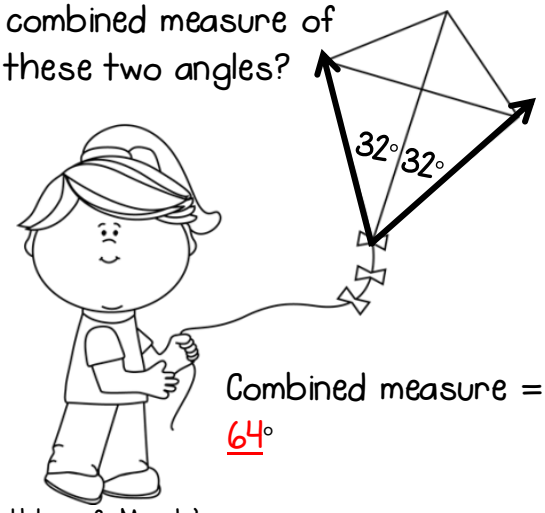
5. ∠ HMC = 148°



6. ∠ KPL = 103°

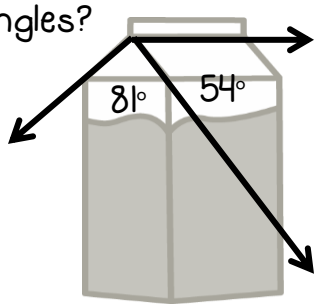


7. Emory measured the two bottom angles of her kite. What is the combined measure of these two angles?



Combined measure = 64°

8. Carter measured the two angles of his milk carton. What is the combined measure of the two angles?



Combined measure = 135°

Name Answer Key

Practice Sheet

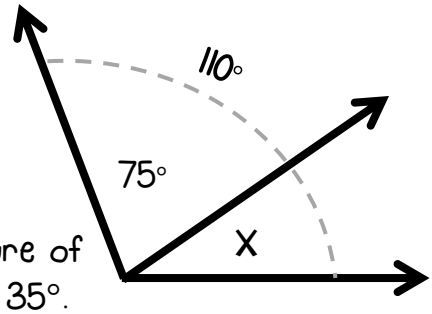
4.MD.7
Separate angles to determine an angle's measure

Separating Angles

The measure of an angle equals the sum of its parts. When the measure of the larger angle and one of the smaller angles is known, subtract to determine the measure of the other small unknown angle.

Example 1: 75° + x = 110°

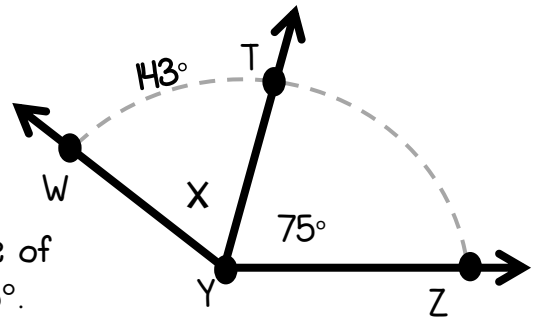
$$\begin{array}{r} 110° \\ -\ 75° \\ \hline 35° \end{array}$$



The measure of angle x is 35°.

Example 2: The measure of angle WYZ is 143°.

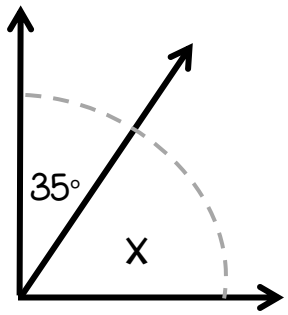
$$\begin{array}{lr} \angle WYZ & 143° \\ \angle TYZ & -\ 75° \\ \hline & 68° \end{array}$$



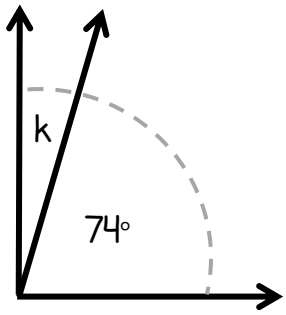
The measure of ∠WYT is 68°.

The combined measure of each angle below is 90°. Find the measure of the unknown angle.

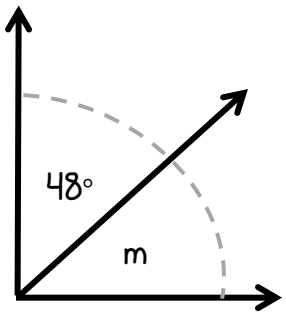
1. Angle x = 55°



2. Angle k = 16°

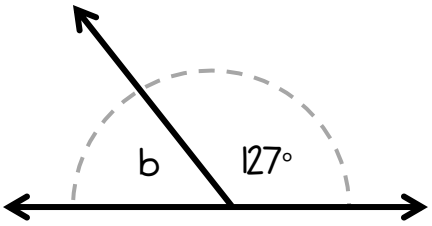


3. Angle m = 42°

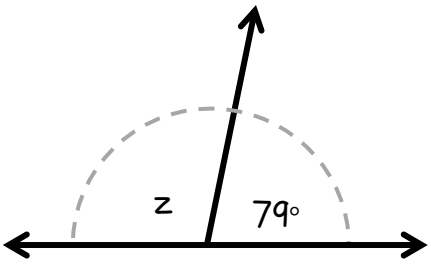


The combined measure of each angle below is 180°. Find the measure of the unknown angle.

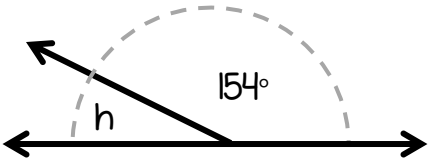
4. Angle b = 53°



5. Angle z = 101°



6. Angle h = 26°



Name Answer Key

Practice Sheet

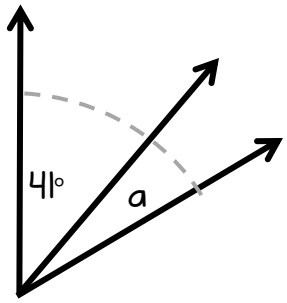
4.MD.7

Separate angles to determine an angle's measure

More Practice: Separating Angles

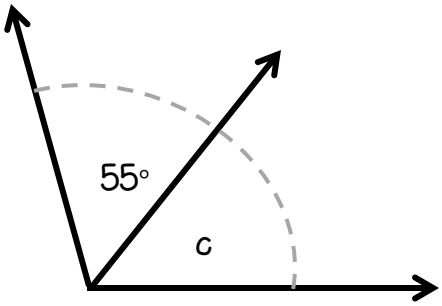
Subtract to find the measure of the unknown angle.

1. The combined angle measure is 60°.



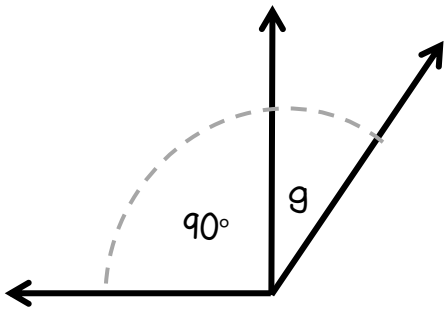
a = 19°

2. The combined angle measure is 105°.



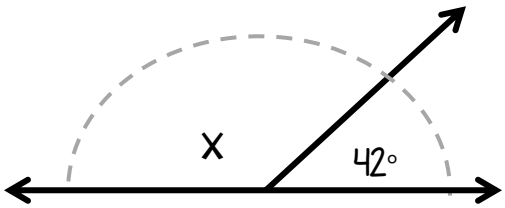
c = 50°

3. The combined angle measure is 124°.



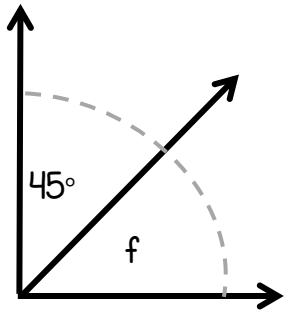
g = 34°

4. The combined angle measure is 180°.



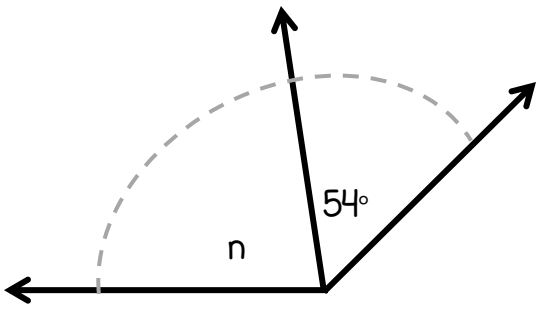
x = 138°

5. The combined angle measure is 90°.



f = 45°

6. The combined angle measure is 136°.



n = 82°

Name Answer Key

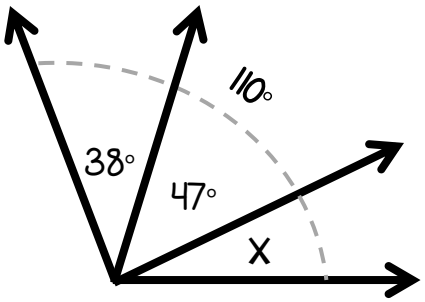
Practice Sheet

4.MD.7
Separate angles to determine an angle's measure

Separating More Than Two Angles

In the angles below, you must first add the two known smaller angles. Then, subtract this measure from the known combined angle to determine the measure of the unknown angle.

Example 1: 38° + 47° + x = 110°



Step 1: Add the two small known angles.

$$\begin{array}{r} 38° \\ +\ 47° \\ \hline 85° \end{array}$$

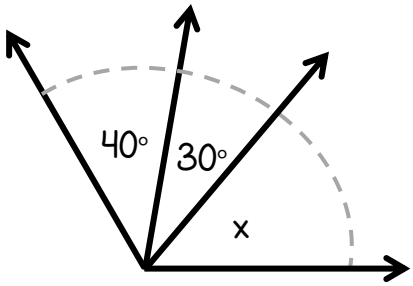
Step 2: Subtract the large angle from this total.

$$\begin{array}{r} 110° \\ -\ 85° \\ \hline 25° \end{array}$$

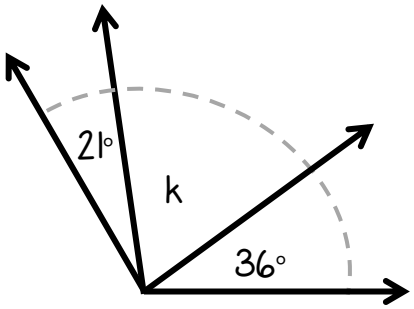
The measure of angle x is 25°.

The combined measure of each angle below is 120°. Find the measure of the unknown angle.

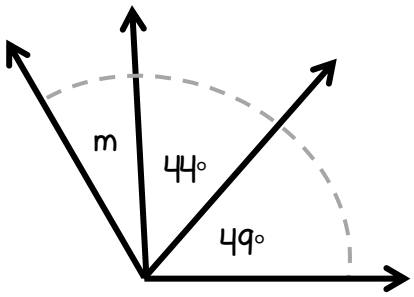
1. Angle x = 50°



2. Angle k = 63°

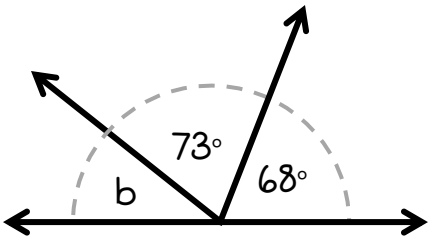


3. Angle m = 27°

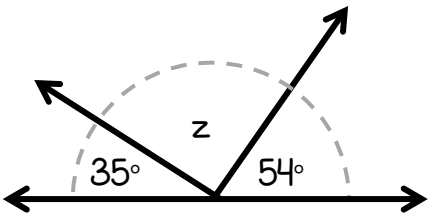


The combined measure of each angle below is 180°. Find the measure of the unknown angle.

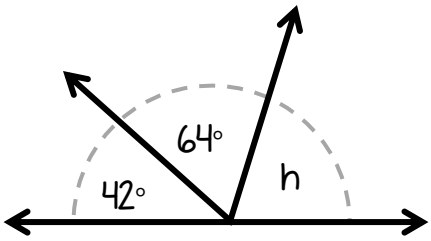
4. Angle b = 39°



5. Angle z = 91°



6. Angle h = 74°



Name Answer Key

Practice Sheet

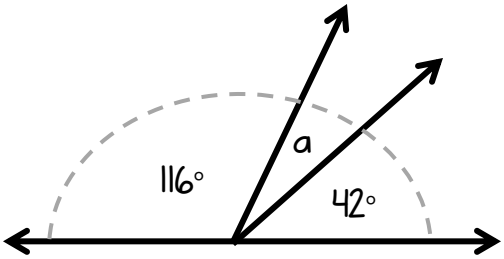
4.MD.7

Separate angles to determine an angle's measure

More Practice: Separating Angles

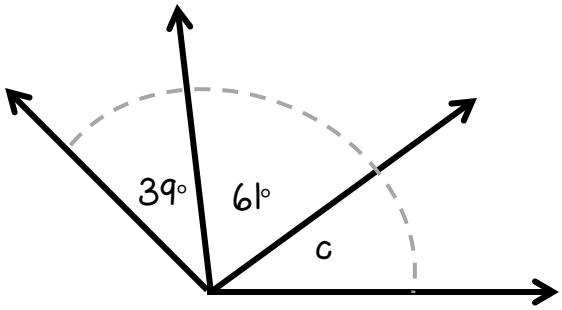
Find the measure of the unknown angle.

1. The combined angle measure is 180°.



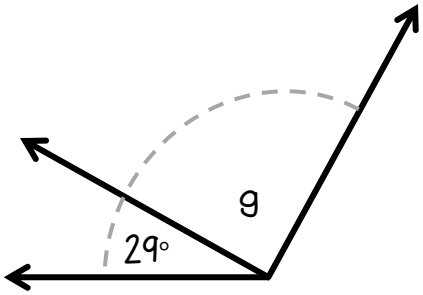
a = 22°

2. The combined angle measure is 135°.



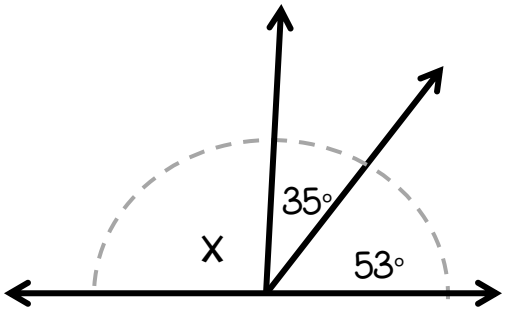
c = 35°

3. The combined angle measure is 118°.



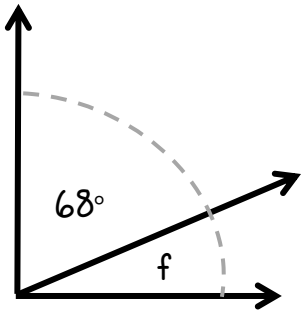
g = 89°

4. The combined angle measure is 180°.



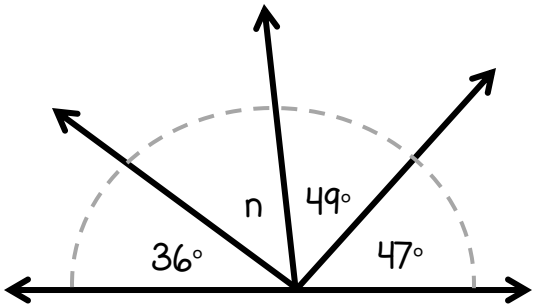
x = 92°

5. The combined angle measure is 90°.



f = 22°

6. The combined angle measure is 180°.



n = 48°

Name Answer Key

Practice Sheet

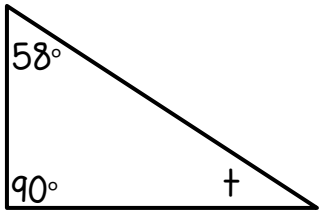
4.MD.7
Separate angles to determine an angle's measure in a shape

Additive Angles in Shapes

You can determine the measure of an unknown angle in shapes.

Example 1:
The angles in a triangle add up to 180°.

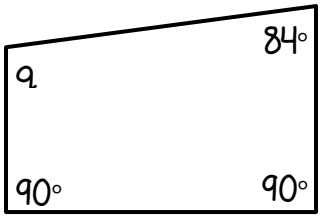
$$\begin{array}{r} 90° \\ +\ 58° \\ \hline 148° \end{array} \qquad \begin{array}{r} 180° \\ -\ 148° \\ \hline 32° \end{array}$$



The measure of angle t = 32°.

Example 2:
The angles in a quadrilateral add up to 360°.

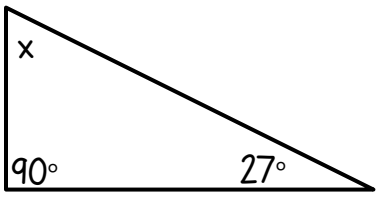
$$\begin{array}{r} 90° \\ 90° \\ +\ 84° \\ \hline 264° \end{array} \qquad \begin{array}{r} 360° \\ -\ 264° \\ \hline 96° \end{array}$$



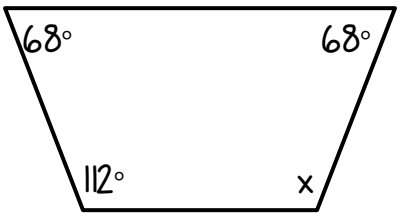
The measure of angle q = 96°.

Find the measure of the unknown angle.

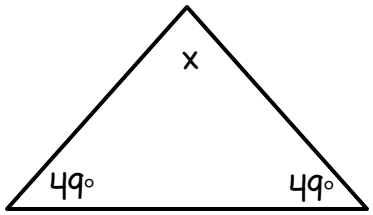
1. x = 63 °



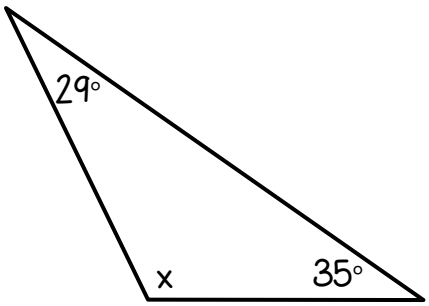
2. x = 112 °



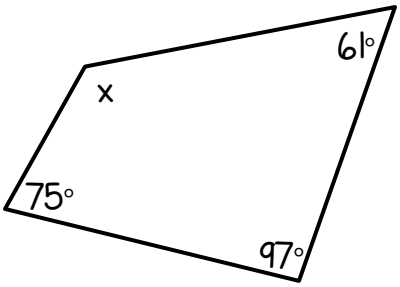
3. x = 82 °



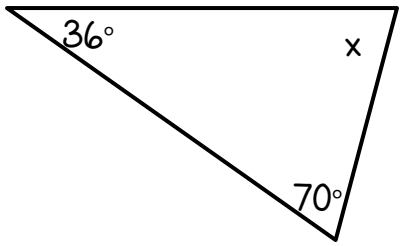
4. x = 116 °



5. x = 127 °



6. x = 74 °



Name Answer Key

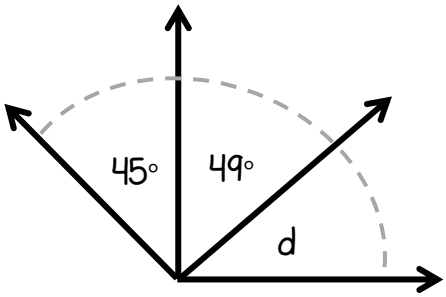
Practice Sheet

4.MD.7
Separate angles to determine an angle's measure

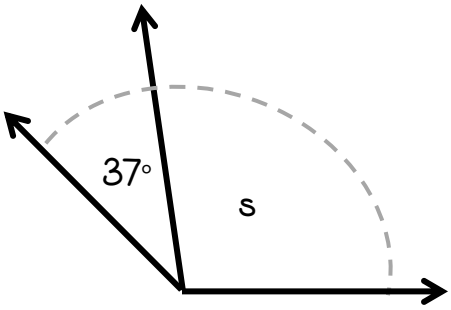
Put It All Together: Separate Angles

The combined measure of each angle below is 120°. Find the measure of the unknown angle.

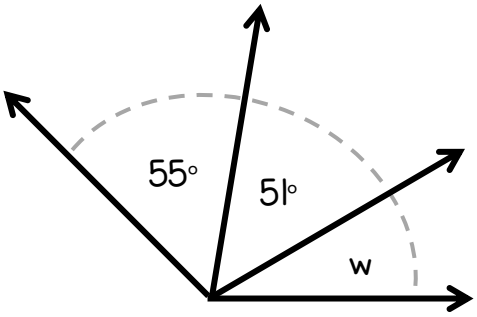
1. Angle d = 41 °



2. Angle s = 98 °

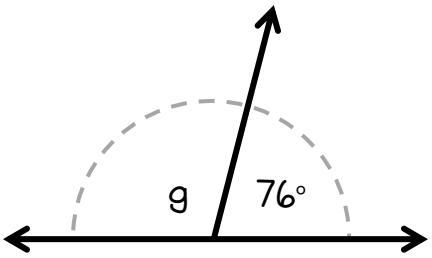


3. Angle w = 29 °

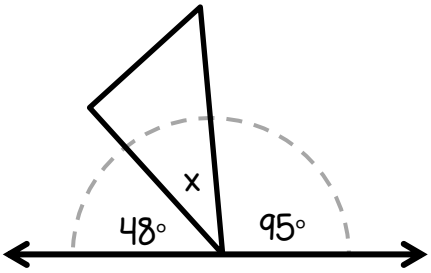


The combined measure of each angle below is 180°. Find the measure of the unknown angle.

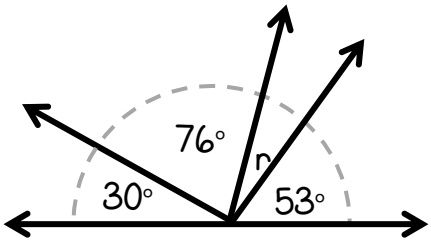
4. Angle g = 104 °



5. Angle x = 37 °



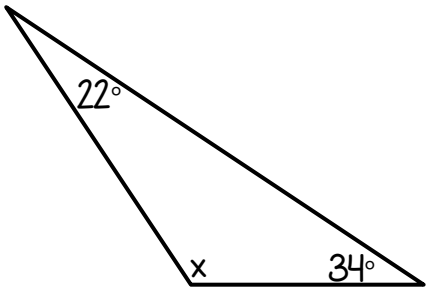
6. Angle r = 21 °



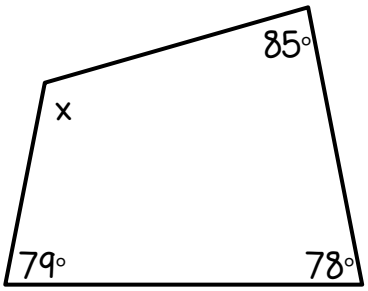
Find the measure of the unknown angle x in each shape below.

- A triangle has a combined angle measure of 180°.
- A quadrilateral has a combined angle measure of 360°.

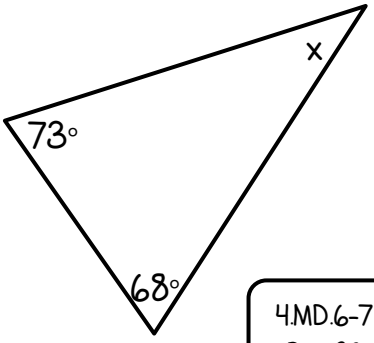
7. x = 124 °



8. x = 118 °



9. x = 39 °



Name Answer Key

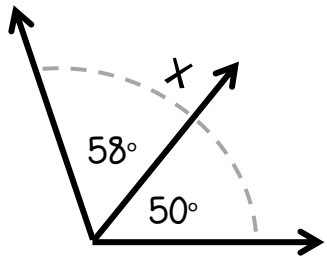
Practice Sheet

4.MD.7
Join and separate angles to determine an angle's measure

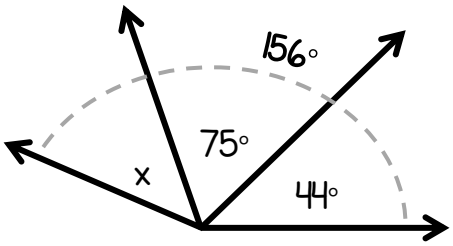
Put It All Together: Join & Separate Angles

Find the measure of the angle x.

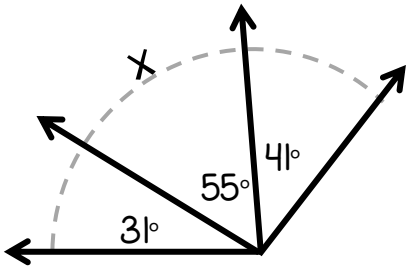
1. Angle x = 108 °



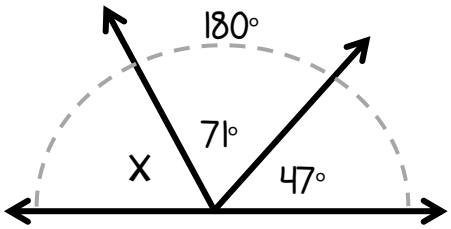
2. Angle x = 37 °



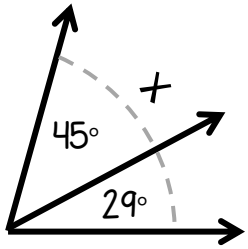
3. Angle x = 127 °



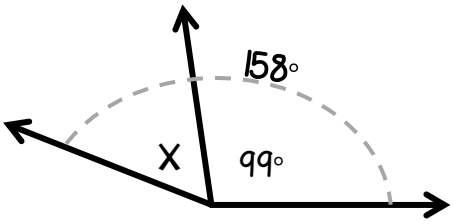
4. Angle x = 62 °



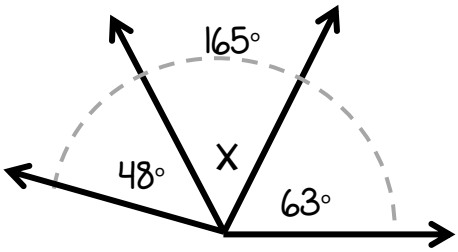
5. Angle x = 74 °



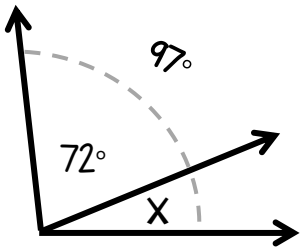
6. Angle x = 59 °



7. Angle x = 54 °



8. Angle x = 25 °



9. Angle x = 144 °