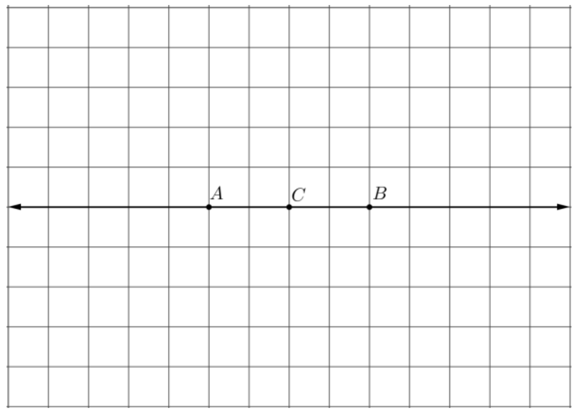
FS Geometry EOC Review

MAFS.912.G-C.1.1

Dilation of a Line: Center on the Line http://www.cpalms.org/Public/PreviewResource/Preview/72776
In the figure, points *A*, *B*, and *C* are collinear.

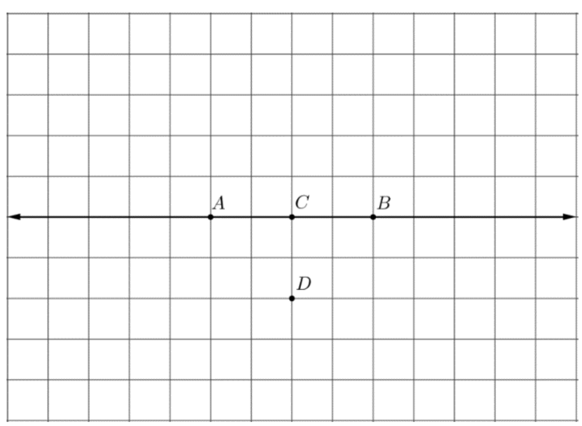
1. Graph the images of points *A*, *B*, and *C* as a result of a dilation with center at point *C* and scale factor of 1.5. Label the images of *A*, *B*, and *C* as A', B', and C', respectively.



2. Describe the image of $\overleftrightarrow{AB}$ as a result of this dilation. In general, what is the relationship between a line and its image after dilating about a center on the line?

Dilation of a Line: Factor of Two. http://www.cpalms.org/Public/PreviewResource/Preview/72887
In the figure, the points *A*, *B*, and *C* are collinear.

1. Graph the images of points *A*, *B*, and *C* as a result of dilation with center at point *D* and scale factor equal to 2. Label the images of *A*, *B*, and *C* as A', B', and C', respectively.

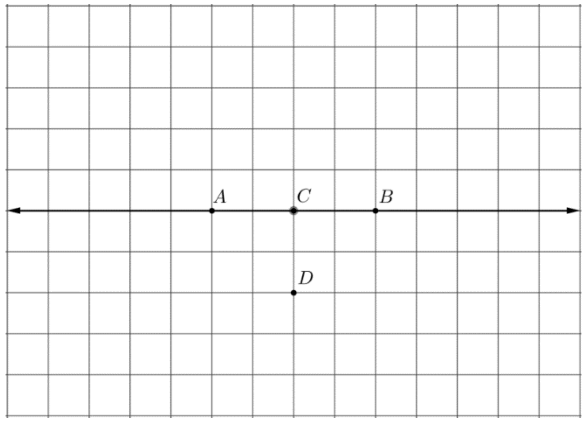


2. Describe the image of $\overleftrightarrow{AB}$ as a result of the same dilation. In general, what is the relationship between a line and its image after dilating about a center not on the line?

Dilation of a Line: Factor of One Half http://www.cpalms.org/Public/PreviewResource/Preview/72961

In the figure, the points *A*, *B*, *C* are collinear.

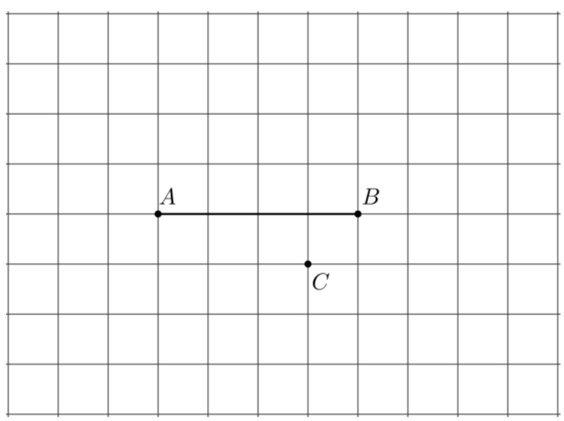
1. Graph the images of points *A*, *B*, *C* as a result of dilation with center at point *D* and scale factor equal to 0.5. Label the images of *A*, *B*, and *C* as A', B', and C', respectively.



2. Describe the image of $\overleftrightarrow{AB}$ as a result of the same dilation. In general, what is the relationship between a line and its image after dilating about a center not on the line?

Dilation of a Line Segment http://www.cpalms.org/Public/PreviewResource/Preview/72983

1. Given $\overline{AB}$, draw the image of $\overline{AB}$ as a result of the dilation with center at point *C* and scale factor equal to 2.

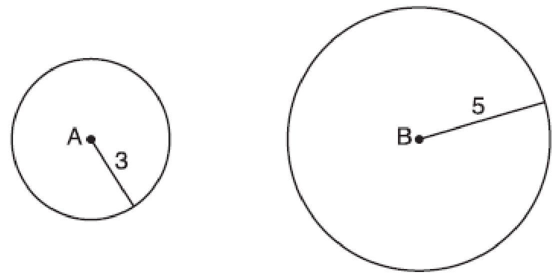


2. Describe the relationship between $\overline{AB}$ and its image.

MAFS.912.G-C.1.1 EOC Practice

1. As shown in the diagram below, circle A as a radius of 3 and circle B has a radius of 5.

   Use transformations to explain why circles A and B are similar.



Check student work: *Sample answer, Circle A can be mapped onto circle B by first translating circle A along vector AB such that A maps onto B, and then dilating circle A, centered at A, by a scale factor of 5/3 . Since there exists a sequence of transformations that maps circle A onto circle B circle A is similar to circle B.*

2. Which can be accomplished using a sequence of similarity transformations?

   I. mapping circle O onto circle P so that O_1 matches P_1

   II. mapping circle P onto circle O so that P_1 matches O_1

   A. I only
   B. II only
   C. both I and II
   D. neither I nor II

3. Which statement explains why all circles are similar?

   A. There are 360° in every circle.
   B. The ratio of the circumference of a circle to its diameter is same for every circle.
   C. The diameter of every circle is proportional to the radius.
   D. The inscribed angle in every circle is proportional to the central angle.

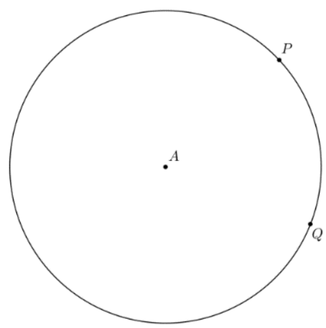
4. Which method is valid for proving that two circles are similar?

   A. Calculate the ratio of degrees to the area for each circle and show that they are equal.
   B. Calculate the ratio of degrees to the radius for each circle and show that they are equal.
   C. Calculate the ratio of the area to the diameter for each circle and show that they are equal.
   D. Calculate the ratio of radius to circumference for each circle and show that they are equal.

MAFS.912.G-C.1.2

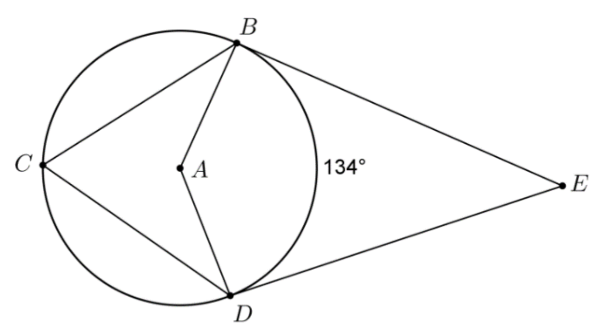
Central and Inscribed Angles http://www.cpalms.org/Public/PreviewResource/Preview/70891

Describe the relationship between an inscribed angle and a central angle that intersect the same arc. Use the circle below to illustrate your reasoning.



Circles with Angles http://www.cpalms.org/Public/PreviewResource/Preview/70897

Use circle *A* below to answer the following questions. Assume points *B*, *C*, and *D* lie on the circle, segments $\overline{BE}$ and $\overline{DE}$ are tangent to circle *A* at points *B* and *D*, respectively, and the measure of $\widehat{BD}$ is $134°$.



1. Identify the type of angle represented by $\angle BAD$, $\angle BCD$, and $\angle BED$ in the diagram and then determine each angle measure. Justify your calculations by showing your work.

   a. $\angle BAD$:
$m\angle BAD =$

   b. $\angle BCD$:
$m\angle BCD =$

   c. $\angle BED$:
$m\angle BED =$

2. Describe, in general, the relationship between:

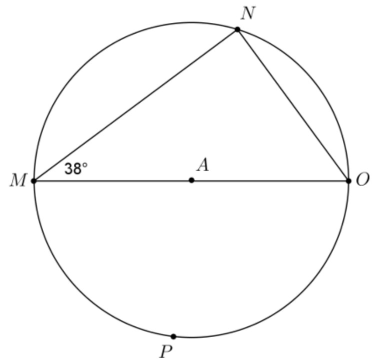
   a. $\angle BAD$ and $\angle BCD$:

   b. $\angle BAD$ and $\angle BED$:

FS Geometry EOC Review

Inscribed Angle on Diameter http://www.cpalms.org/Public/PreviewResource/Preview/70909

1. If point *A* is the center of the circle, what must be true of $m\angle MNO$? Justify your answer.



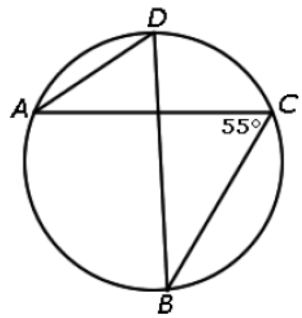
2. Explain how to find the $m\angle NOM$.

Tangent Line and Radius http://www.cpalms.org/Public/PreviewResource/Preview/70953

1. Line *t* is tangent to circle *O* at point *P*. Draw circle *O*, line *t,* and radius $\overline{OP}$. Describe the relationship between $\overline{OP}$ and line *t*.

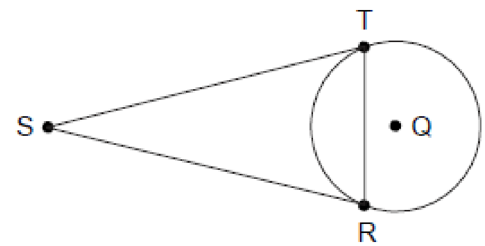
MAFS.912.G-C.1.2 EOC Practice

1. If $m\angle C = 55°$, then what is $m\angle D$?



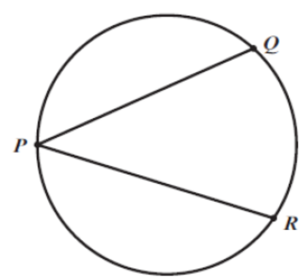
   A. 27.5°
   B. 35°
   C. 55°
   D. 110°

2. Triangle STR is drawn such that segment ST is tangent to circle Q at point T, and segment SR is tangent to circle Q at point R. If given any triangle STR with these conditions, which statement must be true?



   A. Side TR could pass through point Q.
   B. Angle S is always smaller than angles T and R.
   C. Triangle STR is always an isosceles triangle.
   D. Triangle STR can never be a right triangle.

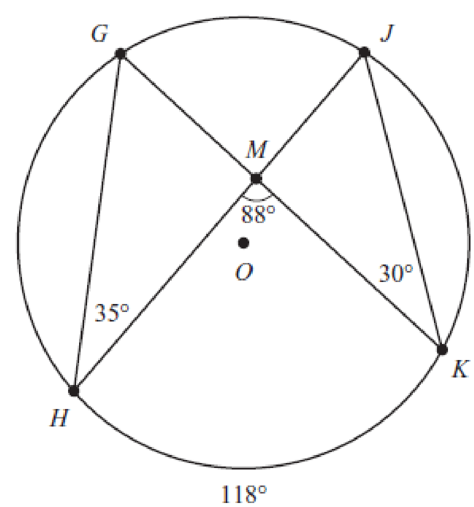
3. In this circle, $\boldsymbol{mQR} = \mathbf{72}°$.



   What is m∠QPR?

   A. 18°
   B. 24°
   C. 36°
   D. 72°

4. Use the diagram to the right to answer the question.



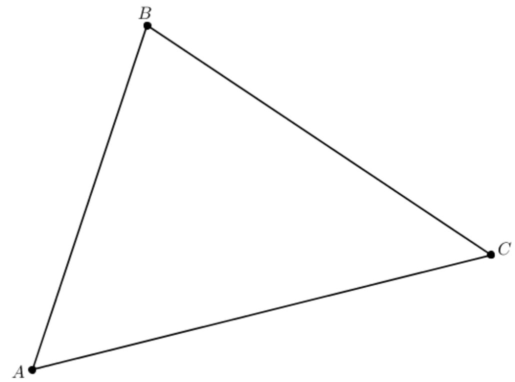
   What is wrong with the information given in the diagram?

   A. $\overline{HJ}$ should pass through the center of the circle.
   B. The length of $\overline{GH}$ should be equal to the length of $\overline{JK}$.
   C. The measure of $\angle GHM$ should be equal to the measure of $\angle JKM$.
   D. The measure of $\angle HMK$ should be equal to half the measure of HK

MAFS.912.G-C.1.3

Inscribed Circle Construction http://www.cpalms.org/Public/PreviewResource/Preview/57537

Use a compass and straightedge to construct a circle inscribed in the triangle.

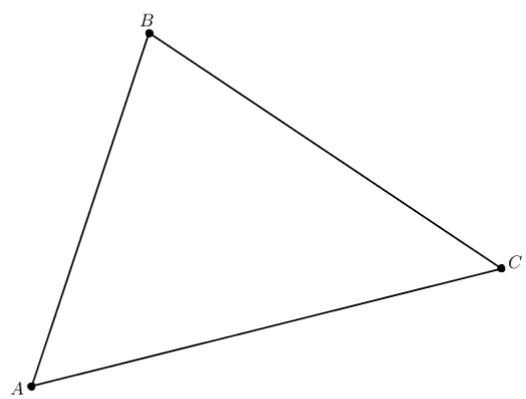


1. What did you construct to locate the center of your inscribed circle?

2. What is the name of the point of concurrency that serves as the center of your inscribed circle?

Circumscribed Circle Construction http://www.cpalms.org/Public/PreviewResource/Preview/57538

Use a compass and straightedge to construct a circle circumscribed about the triangle.

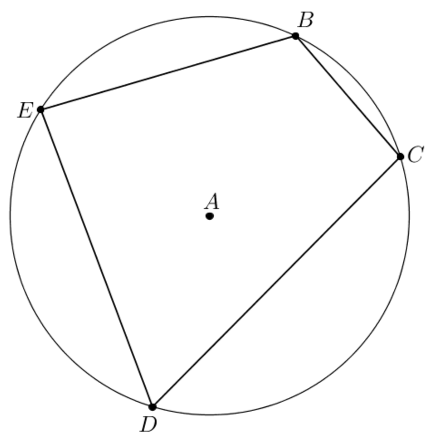


3. What did you construct to locate the center of your circumscribed circle?

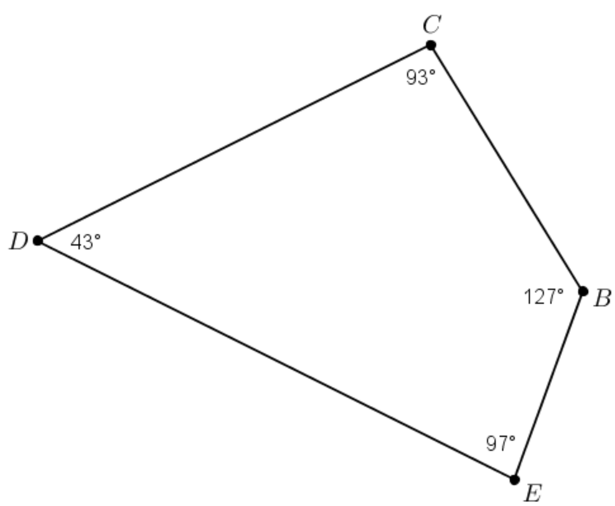
4. What is the name of the point of concurrency that serves as the center of your circumscribed circle?

Inscribed Quadrilaterals http://www.cpalms.org/Public/PreviewResource/Preview/70974

1. Quadrilateral *BCDE* is inscribed in circle *A*. Prove that $\angle EDC$ and $\angle CBE$ are supplementary.



2. Can the quadrilateral below be inscribed in a circle? Explain why or why not.



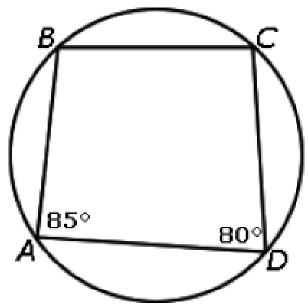
FS Geometry EOC Review

MAFS.912.G-C.1.3 EOC Practice

1. The center of the inscribed circle of a triangle has been established. Which point on one of the sides of a triangle should be chosen to set the width of the compass?

   A. intersection of the side and the median to that side
   B. intersection of the side and the angle bisector of the opposite angle
   C. intersection of the side and the perpendicular passing through the center
   D. intersection of the side and the altitude dropped from the opposite vertex

2. Quadrilateral ABCD is inscribed in a circle as shown in the diagram below.



   If $m\angle A = 85°$ and $m\angle D = 80°$, what is the $m\angle B$?

   A. 80°
   B. 85°
   C. 95°
   D. 100°

3. Quadrilateral ABCD is inscribed in a circle. Segments AB and BC are not the same length. Segment AC is a diameter. Which must be true?

   A. ABCD is a trapezoid.
   B. ABCD is a rectangle.
   C. ABCD has at least two right angles.
   D. ABCD has an axis of symmetry.

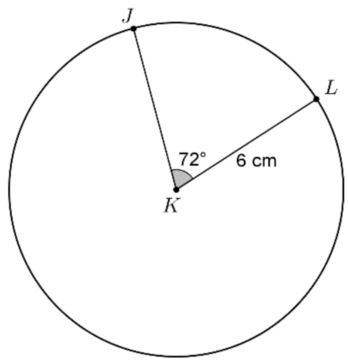
4. Which statement is valid when a circumscribed circle of an obtuse triangle is constructed?

   A. The longest side of the triangle lies on the diameter of the circle.
   B. The circle is drawn inside the triangle touching all 3 sides.
   C. The center of the circle is in the interior of the triangle.
   D. The vertices of the triangle lie on the circle.

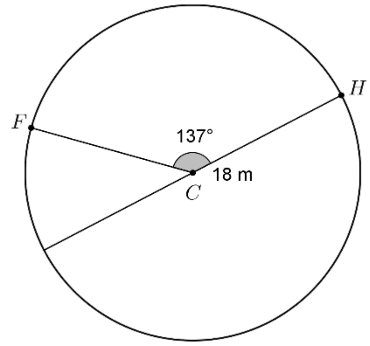
MAFS.912.G-C.2.5

Arc Length http://www.cpalms.org/Public/PreviewResource/Preview/66166

1. Find the length of $\widehat{JL}$ of circle K in terms of π. Show all of your work carefully and completely.

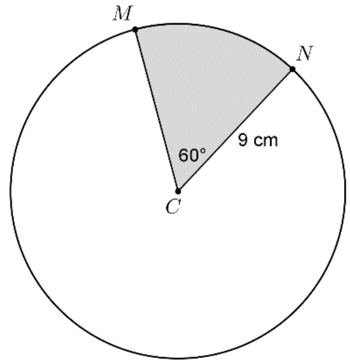


2. Find the length of $\widehat{FH}$ of circle C. Round your answer to the nearest hundredth. Show all of your work carefully and completely.

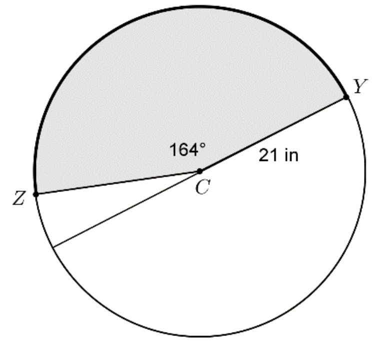


Sector Area http://www.cpalms.org/Public/PreviewResource/Preview/66239

1. Find the area of the shaded sector in terms of π. Show all of your work carefully and completely.



2. Find the area of the shaded sector. Round your answer to the nearest hundredth. Show all of your work carefully and completely.

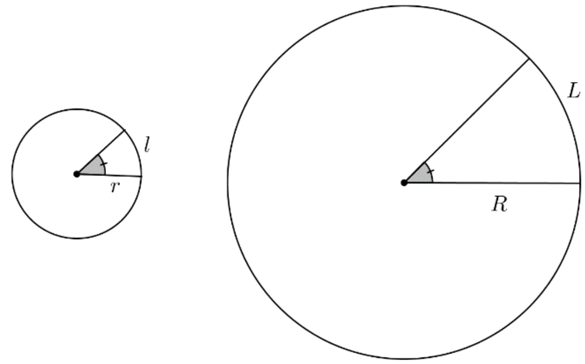


FS Geometry EOC Review

Arc Length and Radians http://www.cpalms.org/Public/PreviewResource/Preview/71060

Use the similarity of circles to explain why the length of an arc intercepted by an angle is proportional to the radius. That is, given the following diagram:

1. Explain why $\frac{L}{l} = \frac{R}{r}$.



2. Explain how the fact that arc length is proportional to radius leads to a definition of the radian measure of an angle.

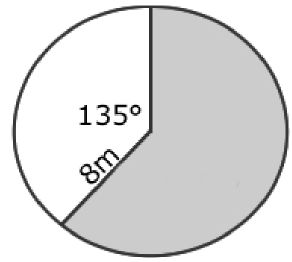
Deriving the Sector Area Formula http://www.cpalms.org/Public/PreviewResource/Preview/71079

1. Write a formula that can be used to find the area of a sector of a circle. Be sure to explain what each variable represents. You may include a diagram in your description.

2. Explain and justify the formula you wrote.

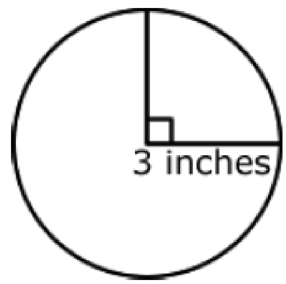
MAFS.912.G-C.2.5 EOC Practice

1. What is the area of the shaded sector?



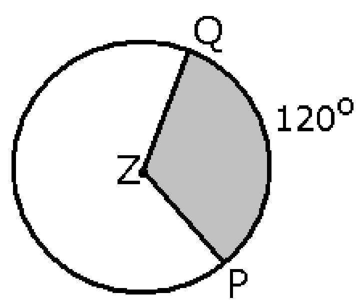
   A. 5π square meters
   B. 10π square meters
   C. 24π square meters
   D. 40π square meters

2. What is the area of the 90° sector?



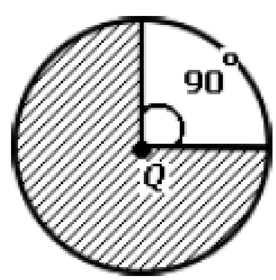
   A. $\frac{3\pi}{4}$ square inches
   B. $\frac{3\pi}{2}$ square inches
   C. $\frac{9\pi}{4}$ square inches
   D. $\frac{9\pi}{2}$ square inches

3. What is the area of the shaded sector if the radius of circle Z is 5 inches?



   A. $\frac{25\pi}{3}$ square inches
   B. 25π square inches
   C. $\frac{25\pi}{4}$ square inches
   D. 5π square inches

4. What is the area of the shaded sector, given circle Q has a diameter of 10?

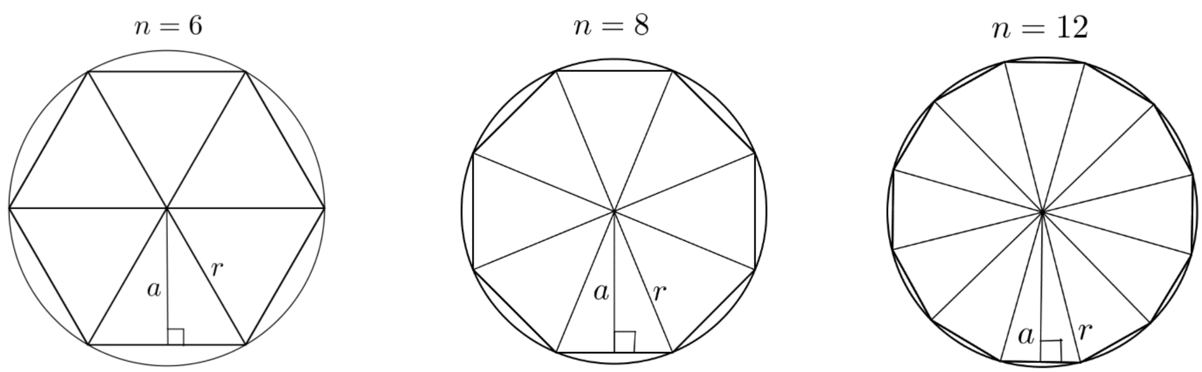


   A. $18\frac{3}{4}\pi$ square units
   B. 25π square units
   C. $56\frac{1}{4}\pi$ square units
   D. 75π square units

MAFS.912.G-GMD.1.1

Area and Circumference – 1 http://www.cpalms.org/Public/PreviewResource/Preview/71089

Suppose a regular *n*-gon is inscribed in a circle of radius *r*. Diagrams are shown for *n* = 6, *n* = 8, and *n* = 12.



Imagine how the relationship between the *n*-gon and the circle changes as *n* increases.

1. Describe the relationship between the area of the *n*-gon and the area of the circle as *n* increases.

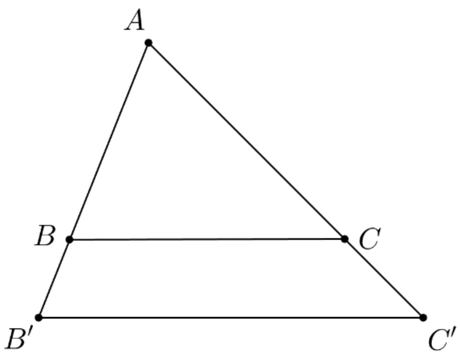
2. Describe the relationship between the perimeter of the *n*-gon and the circumference of the circle as *n* increases.

3. Recall that the area of a regular polygon, A_P, can be found using the formula $A_P = \frac{1}{2}ap$ where a is the apothem and p is the perimeter of the polygon, as shown in the diagram. Consider what happens to a and p in the formula $A_P = \frac{1}{2}ap$ as n increases and derive an equation that describes the relationship between the area of a circle, A, and the circumference of the circle, *C*.

Area and Circumference – 2 http://www.cpalms.org/Public/PreviewResource/Preview/71092

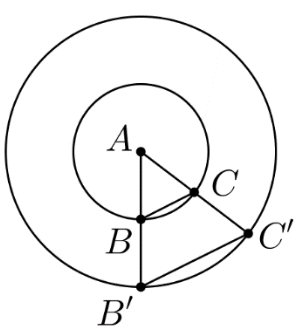
The objective of this exercise is to show that for any circle of radius *r*, the area of the circle, *A*(*r*), can be found in terms of the area of the unit circle, *A*(1). In other words, show that
$A(r) = r^2 \cdot A(1)$.

1. Given ΔABC and $\Delta AB'C'$ such that $AB' = r \cdot AB$ and $AC' = r \cdot AC$, show or explain why the Area of $\Delta AB'C'$ = r^2 · Area of ΔABC.



2. Given two concentric circles with center at *A*, one of radius 1 (that is, *AB* = 1) and the other of radius *r* with $r > 1$ (that is, $AB' = r$), so that $AB' = r \cdot AB$ and $AC' = r \cdot AC$.

Let $\overline{BC}$ be one side of regular *n*-gon P_n inscribed in circle *A* of radius 1 and let $\overline{B'C'}$ be one side of regular *n*-gon P'_n inscribed in circle *A* of radius *r*. Using the result from (1), show or explain why Area of P'_n = r^2 · Area of P_n.



3. Finally, show or explain why $A(r) = r^2 \cdot A(1)$.

FS Geometry EOC Review

Area and Circumference – 3 http://www.cpalms.org/Public/PreviewResource/Preview/71248

The unit circle is a circle of radius 1. Define π to be the area, $A(1)$, of the unit circle, that is, $\pi = A(1)$.

Let A represent the area and C represent the circumference of a circle of radius r. Assume each of the following is true:

- The area of a circle is equal to half of the product of the circumference and the radius, that is $A = \frac{1}{2} Cr$.
- The area of a circle is equal to r^2 times the area of the unit circle, that is, $A = r^2 \cdot A(1)$.

Use these two assumptions and the above definition of π to derive:

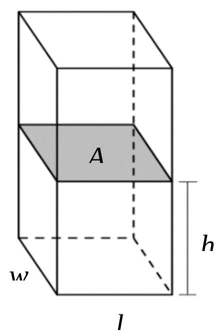
1. The formula for the area, A, of a circle.

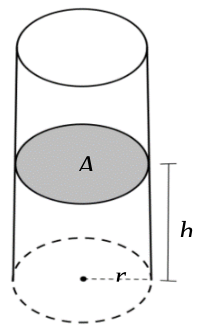
2. The formula for the circumference, C, of a circle.

3. The formula for π in terms of C and d, the diameter of a circle.

Volume of a Cylinder http://www.cpalms.org/Public/PreviewResource/Preview/71300

The rectangular prism and the cylinder below have the same height and the same cross-sectional area at any given height above the base. This means that the area of the shaded rectangle, A_1, is the same as the area of the shaded circle, A_2 when $h_1 = h_2$.



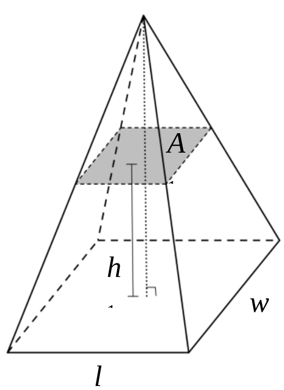


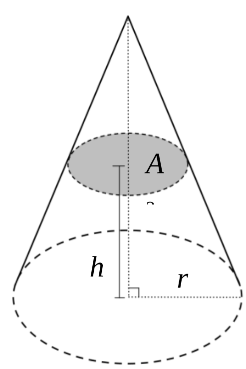
V = Volume

1. Use the formula for the volume of a prism ($V = l \cdot w \cdot h$) to derive and explain the formula for the volume of a cylinder.

Volume of a Cone http://www.cpalms.org/Public/PreviewResource/Preview/71307

The rectangular pyramid and the cone below have the same height and the same cross-sectional area at any given height above the base. This means that the area of the shaded square, A_1, is the same as the area of the shaded circle, $A_2$when $h_1 = h_2$.





V = Volume

h = height

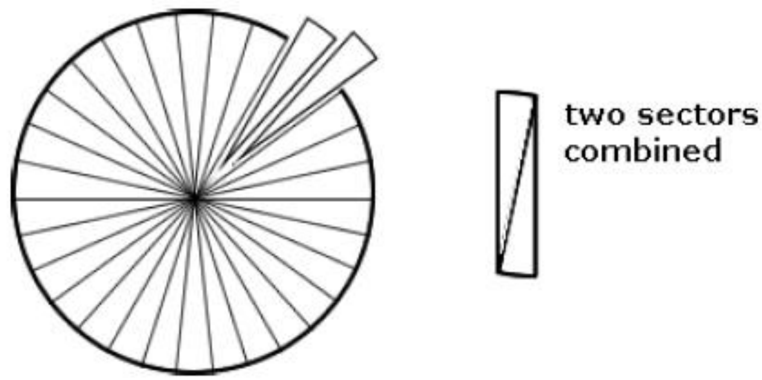
r = radius

1. Use the formula for the volume of a rectangular pyramid ($V = \frac{1}{3} \cdot lwh$) to derive and explain the formula for the volume of a cone.

FS Geometry EOC Review

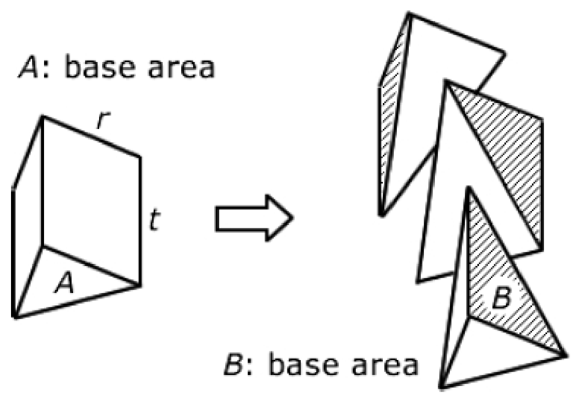
MAFS.912.G-GMD.1.1 EOC Practice

1. To estimate the area of a circle, Irene divided the circle into 30 congruent sectors. Then she combined pairs of sectors into shapes as shown below. As the shapes resemble rectangles, she treats the shapes as rectangles with the height r (radius) and the base equal to the length of the curved side of one sector. What is the area of each shape?



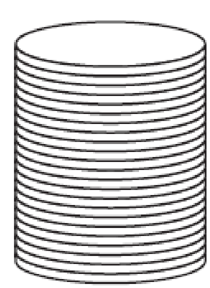
A. $r\frac{nr}{15}$
B. $r\frac{nr}{30}$
C. $r\frac{nr}{60}$
D. $r\frac{nr}{120}$

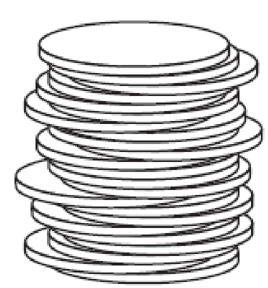
2. The prism can be cut into three pyramids with the shaded faces congruent. If the shaded faces are considered as bases, then all three pyramids have the same height, h. Therefore the pyramids have equal volumes. What is the volume of each pyramid?



A. $\frac{1}{3}Bt$
B. $\frac{1}{3}Ah$
C. $\frac{1}{3}Ar$
D. $\frac{1}{3}At$

3. Two stacks of 23 quarters each are shown below. One stack forms a cylinder but the other stack does not form a cylinder.

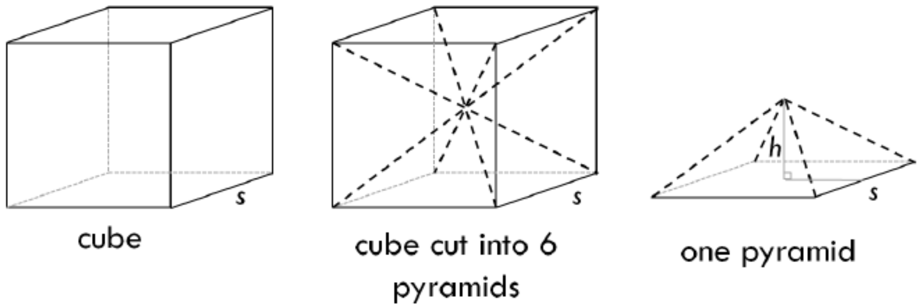




Use Cavelieri's principle to explain why the volumes of these two stacks of quarters are equal.

<u>Check Student work: Sample Answer:</u> Each quarter in both stacks has the same base area. Therefore, each corresponding cross-section of the stacks will have the same area. Since the two stacks of quarters have the same height of 23 quarters, the two volumes must be the same.

4. Sasha derived the formula for the volume of a square pyramid. She started by dividing a cube into 6 identical square pyramids. The top vertex of each pyramid meets at the central point in the cube, with the cube's diagonals as the edges.



$$V = \textit{the volume of a pyramid}; s = \textit{side length of base}, h = \textit{height of pyramid}$$

The steps of Sasha's work are shown.

- Step 1: $\boldsymbol{6V = s^3}$
- Step 2: $\boldsymbol{V = \frac{1}{3}s^3}$

Maggie also derived the formula for volume of a square pyramid.

- Maggie's result is $\boldsymbol{V = \frac{1}{3}s^2h}$.

The formulas derived by Sasha and Maggie can both be used to correctly calculate the volume of a square pyramid. What are the best next steps for Sasha to take to prove that either formula can be used to find the volume of a square pyramid?

A.

step 3	$2h = s$
step 4	$V = \frac{1}{6}(2h)^3$
step 5	$V = \frac{1}{3}8h^3$

B.

step 3	$2h = s$
step 4	$V = \frac{1}{6}s^2(s)$
step 5	$V = \frac{1}{6}s^2(2h)$

C.

step 3	$2s = h$
step 4	$s = \frac{1}{2}h$
step 5	$V = \frac{1}{6}s^2(s)$
step 6	$V = \frac{1}{6}s^2\left(\frac{1}{2}h\right)$

D.

step 3	$2s = h$
step 4	$s = \frac{1}{2}h$
step 5	$V = \frac{1}{6}\left(\frac{1}{2}h\right)^3$
step 6	$V = \frac{1}{6}\left(\frac{1}{8}\right)h^3$

MAFS.912.G-GMD.1.3

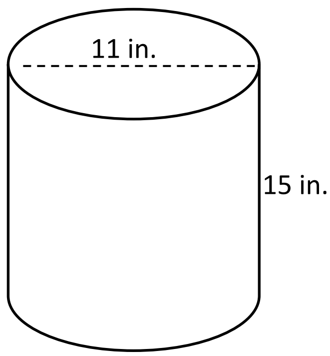
Volume of a Cylinder http://www.cpalms.org/Public/PreviewResource/Preview/57553

The coach at Coastal High School is concerned about keeping her athletes hydrated during practice. She can either buy a case of 24 quart-sized drinks or fill a cylindrical cooler with water and a powder mix. The dimensions of the cylindrical cooler are given below and one quart is equal to 57.75 cubic inches. Which option provides the most drink for her athletes?

1. Look up any formulas you need in your book. Justify your response by showing and/or explaining your work.

Individual Drinks

Cylindrical Cooler

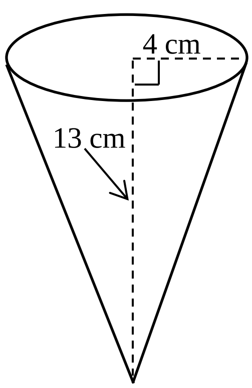


Snow Cones http://www.cpalms.org/Public/PreviewResource/Preview/57555

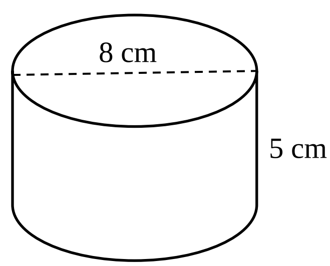
Jennifer loves snow cones and wants to get the most for her money. There are two vendors at the fair selling snow cones for the same price. If the two containers are completely filled and then leveled off across their tops, which will hold the most? If necessary, round off to the nearest cubic centimeter.

1. Look up any formulas you need in your book. Justify your response by showing and/or explaining your work.

Traditional Snow Cone



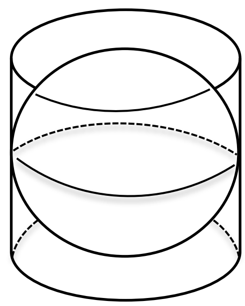
Snow Cone in a Cup



Do Not Spill the Water! http://www.cpalms.org/Public/PreviewResource/Preview/57556

Suppose a ball is completely submerged inside a cylinder filled with water displacing some of the water in the cylinder. Assume the ball and the cylinder both have a diameter of 10 centimeters, and the diameter of the ball is the same as the height of the cylinder.

Determine the volume of water that can remain in the cylinder after the ball is inserted so that the water rises to the top edge of the cylinder without spilling. Look up any formulas you need in your book or notes. Justify your response by showing and/or explaining your work.

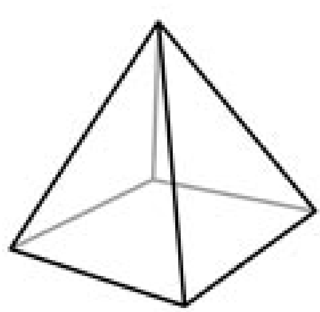


The Great Pyramid http://www.cpalms.org/Public/PreviewResource/Preview/59177

The Great Pyramid of Giza is an example of a square pyramid and is the last surviving structure considered a wonder of the ancient world. The builders of the pyramid used a measure called a cubit, which represents the length of the forearm from the elbow to the tip of the middle finger. One cubit is about 20 inches in length.

Find the height of the Great Pyramid (in cubits) if each base edge is 440 cubits long and the volume of the pyramid is 18,069,330 cubic cubits.

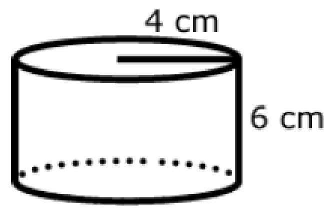
Look up any formulas you need in your book. Justify your response by showing and/or explaining your work.



FS Geometry EOC Review

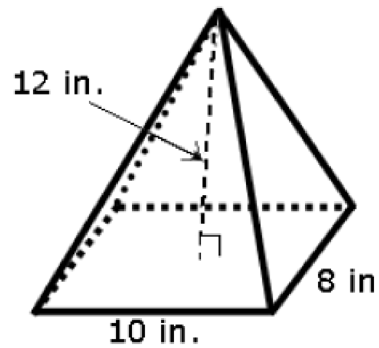
MAFS.912.G-GMD.1.3 EOC Practice

1. Find the volume of the cylinder.



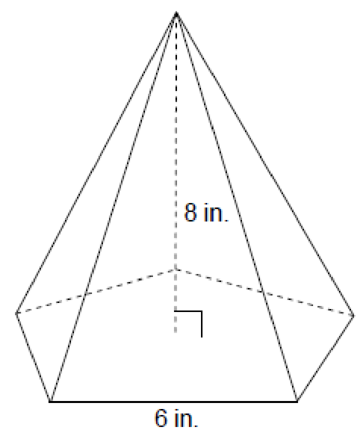
   A. 452.2 cubic cm
   B. 301.4 cubic cm
   C. 150.7 cubic cm
   D. 75.4 cubic cm

2. Find the volume of the rectangular pyramid.



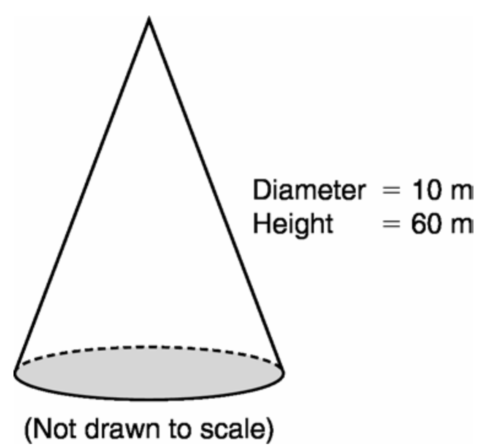
   A. 72 cubic inches
   B. 200 cubic inches
   C. 320 cubic inches
   D. 960 cubic inches

3. This right pentagonal pyramid has a height of 8 inches and a base area of 61.94 square inches. To the nearest hundredth, what is the volume of the pyramid?



   A. 80.00 cubic inches
   B. 165.17 cubic inches
   C. 240.00 cubic inches
   D. 495.52 cubic inches

4. What is the volume of the cone shown?

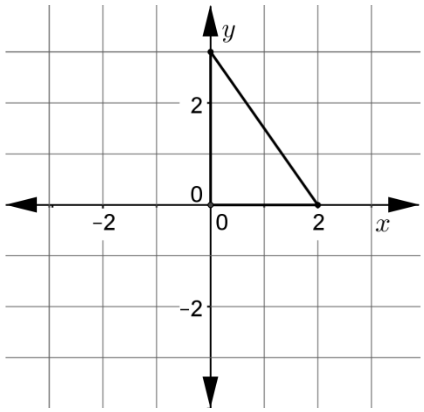


   A. $500\pi\ m^3$
   B. $1{,}500\pi\ m^3$
   C. $2{,}000\pi\ m^3$
   D. $3{,}000\pi\ m^3$

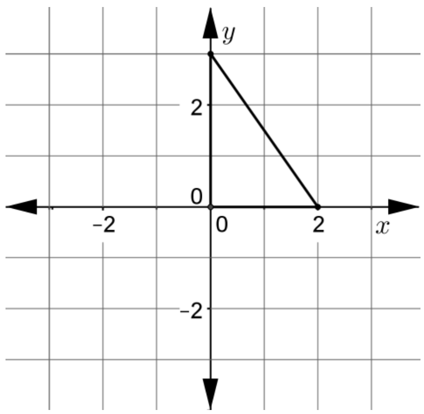
MAFS.912.G-GMD.2.4

2D Rotations of Triangles http://www.cpalms.org/Public/PreviewResource/Preview/55011

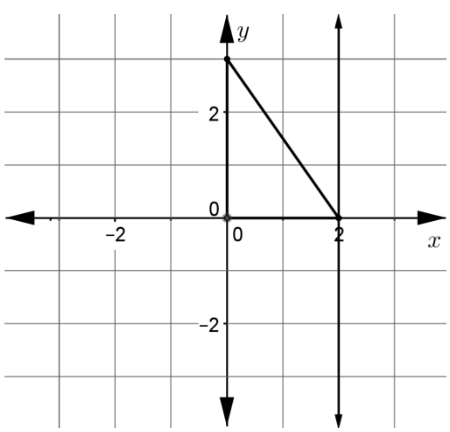
1. Describe in detail the solid formed by rotating a right triangle with vertices at (0, 0), (2, 0), and (0, 3) about the vertical axis. Include the dimensions of the solid in your description.



2. Describe in detail the solid formed by rotating a right triangle with vertices at (0, 0), (2, 0), and (0, 3) about the horizontal axis. Include the dimensions of the solid in your description.

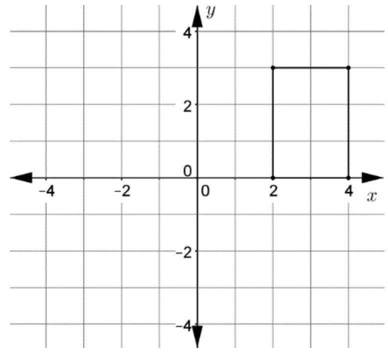


3. Imagine the solid formed by rotating the same right triangle about the line x = 2. Describe this solid in detail

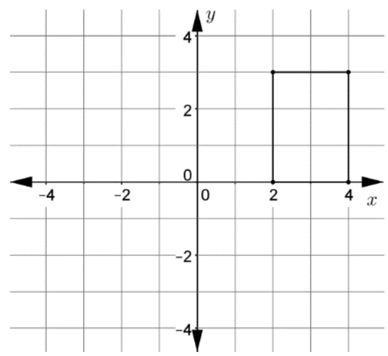


2D Rotations of Rectangles http://www.cpalms.org/Public/PreviewResource/Preview/55014

1. Describe in detail the solid formed by rotating a 2 x 3 rectangle with vertices (2, 0), (4, 0), (2, 3) and (4, 3) about the *x*-axis. Include the dimensions of the solid in your description.

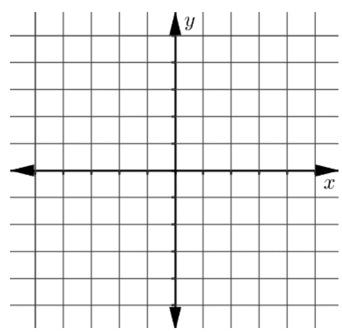


2. Describe in detail the solid formed by rotating a 2 x 3 rectangle with vertices (2, 0), (4, 0), (2, 3), and (4, 3) about the *y*-axis. Include the dimensions of the solid in your description.

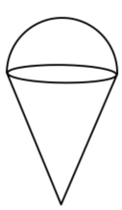


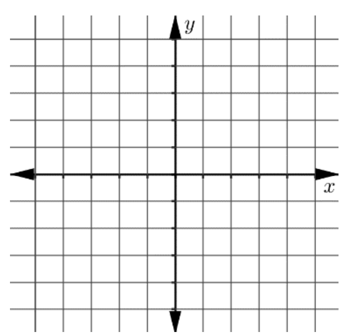
Working Backwards – 2D Rotations http://www.cpalms.org/Public/PreviewResource/Preview/56776

1. Identify and draw a figure that can be rotated around the *y*-axis to generate a sphere.



2. Draw a figure that can be rotated about the *y*-axis to generate the following solid (a hemisphere atop a cone).

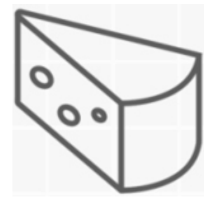




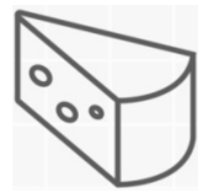
FS Geometry EOC Review

Slice It. http://www.cpalms.org/Public/PreviewResource/Preview/71357

1. Draw and describe the shape of a two-dimensional cross-section that would be visible if you vertically slice the object, perpendicular to the base.

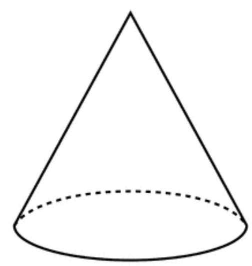


2. Draw and describe the shape of a two-dimensional cross-section that would be visible if you horizontally slice the object, parallel to the base.



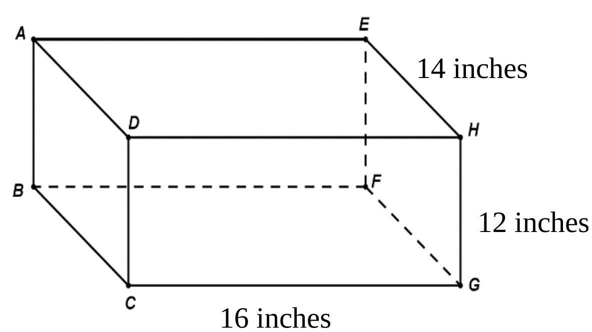
Slice of a Cone http://www.cpalms.org/Public/PreviewResource/Preview/71370

1. Draw three different horizontal cross-sections of the cone that occur at different heights. How are these three cross-sections related?

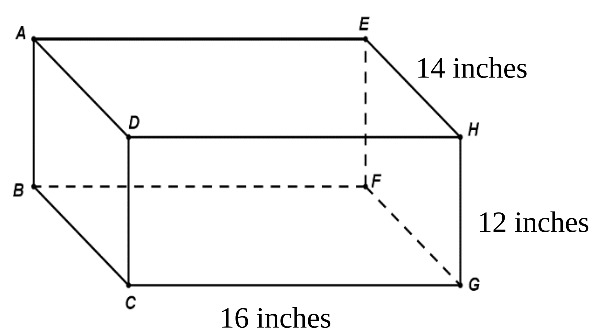


Inside the Box http://www.cpalms.org/Public/PreviewResource/Preview/71414

1. In the space provided, sketch both a horizontal and vertical cross section of the box. Label the dimensions on your sketch.



2. Imagine a cross-section defined by plane *EBCH*. Sketch the cross-section and label the dimensions that you know or can find.



Circles, Geometric Measurement, and Geometric Properties with Equati

MAFS.912.G-GMD.2.4 EOC Practice

1. An isosceles right triangle is placed on a coordinate grid. One of its legs is on the x-axis and the other on the y-axis. Which describes the shape created when the triangle is rotated about the $x - axis$?

   A. Cone
   B. Cylinder
   C. Pyramid
   D. Sphere

2. A rectangle will be rotated 360° about a line which contains the point of intersection of its diagonals and is parallel to a side. What three-dimensional shape will be created as a result of the rotation?

   A. Cube
   B. Rectangular Prism
   C. Cylinder
   D. a sphere

3. Which of the following figures could be produced by translating a polygon back and forth in a direction perpendicular to the plane containing the figure?

   A. Cone
   B. Cylinder
   C. Prism
   D. Sphere

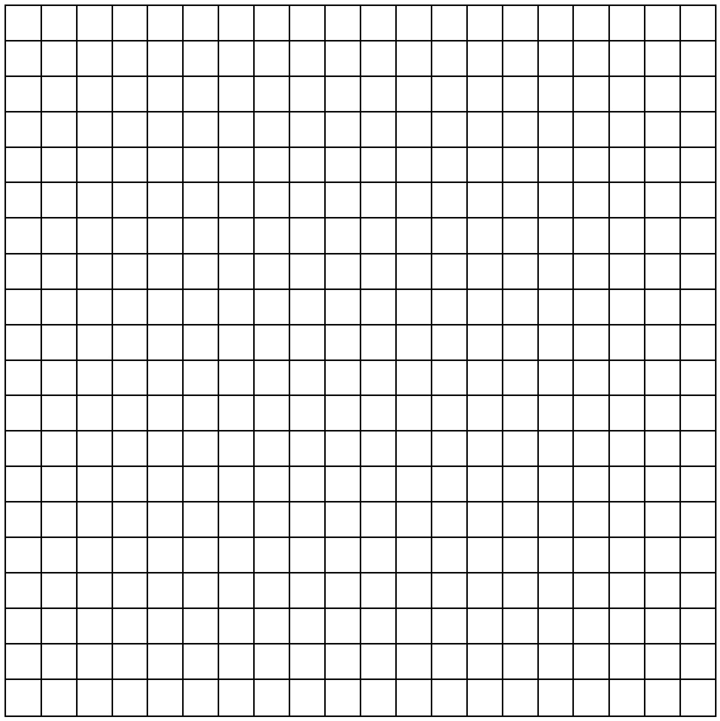
4. Which of the following is the best description for the resulting three-dimensional figure if a right triangle is rotated about the line containing its hypotenuse?

   A. a cone with slant height the same length as the longest leg
   B. a pyramid with triangular base
   C. two cones sharing the same circular base with apexes opposite each other
   D. a cone with slant height the same length as the shortest leg

MAFS.912.G-GPE.1.1

Derive the Circle – Specific Points http://www.cpalms.org/Public/PreviewResource/Preview/71490

1. The center of a circle is at (-5, 7) and its radius is 6 units. Derive the equation of the circle using the Pythagorean Theorem. You may use the coordinate plane to illustrate your reasoning.

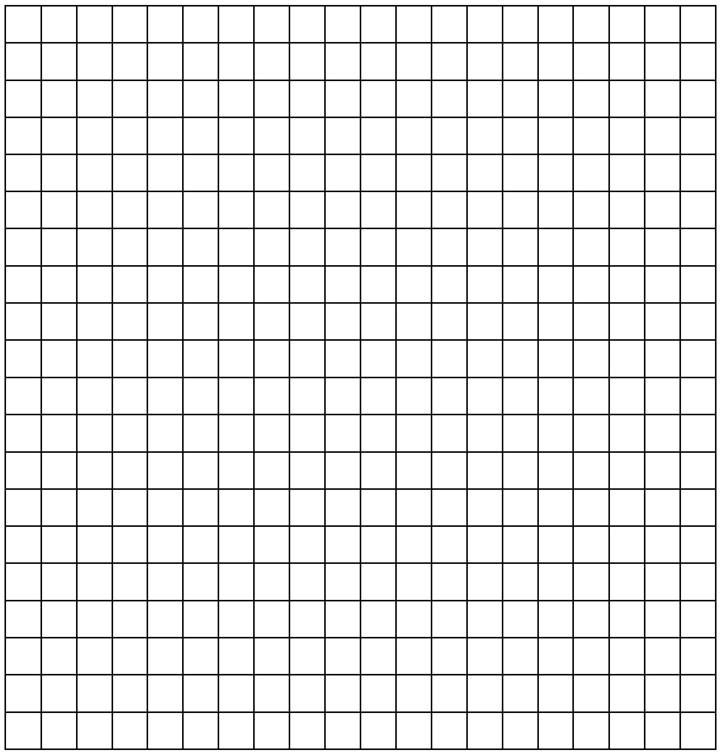


Derive the Circle – General Points http://www.cpalms.org/Public/PreviewResource/Preview/71573

The standard form of the equation of a circle with center (h, k) and radius r is written as:

$$(x-h)^2+(y-k)^2 \;=\; r^2$$

Show how this equation can be derived from the Pythagorean Theorem. Use the coordinate plane to illustrate your reasoning.



Complete the Square for Center-Radius http://www.cpalms.org/Public/PreviewResource/Preview/71601

The equation of a circle in general form is:

$$x^2+6x+y^2+5=0$$

1. Find the center and radius of the circle. Show all work neatly and completely.

Complete the Square for Center-Radius 2 http://www.cpalms.org/Public/PreviewResource/Preview/71664

The equation of a circle in general form is:

$$4x^2-16x+4y^2-24y\;+16=0$$

1. Find the center and radius of the circle. Show all work neatly and completely.

MAFS.912.G-GPE.1.1 EOC Practice

1. A circle has this equation.

$$x^2 + y^2 + 4x - 10y = 7$$

   What are the center and radius of the circle?

   A. center: (2, –5)
      radius: 6
   B. center: (–2, 5)
      radius: 6
   C. center: (2, –5)
      radius: 36
   D. center: (–2, 5)
      radius: 36

2. The equation $x^2 + y^2 - 4x + 2y = b$ describes a circle.

   Part A
   Determine the y-coordinate of the center of the circle. Enter your answer in the box. - 1

   Part B
   The radius of the circle is 7 units. What is the value of b in the equation? Enter your answer in the box. 44

3. What is the radius of the circle described by the equation $(x-2)^2 + (y+3)^2 = 25$?

   A. 4
   B. 5
   C. 25
   D. 625

4. What is the equation of a circle with radius 3 and center $(3, 0)$?

   A. $x^2 + y^2 - 6x = 0$
   B. $x^2 + y^2 + 6x = 0$
   C. $x^2 + y^2 - 6x + 6 = 0$
   D. $x^2 + y^2 - 6y + 6 = 0$

FS Geometry EOC Review

MAFS.912.G-GPE.2.4

Describe the Quadrilateral http://www.cpalms.org/Public/PreviewResource/Preview/59180

1. A quadrilateral has vertices at *A*(-3, 2), *B*(-2, 6), *C*(2, 7) and *D*(1, 3). Which, if any, of the following describe quadrilateral *ABCD*: parallelogram, rhombus, rectangle, square, or trapezoid? Justify your reasoning.

Type of Triangle http://www.cpalms.org/Public/PreviewResource/Preview/59181

1. Triangle *PQR* has vertices at *P*(8, 2), *Q*(11, 13), and *R*(2, 6). Without graphing the vertices, determine if the triangle is scalene, isosceles, or equilateral. Show all of your work and justify your decision.

Diagonals of a Rectangle http://www.cpalms.org/Public/PreviewResource/Preview/59183

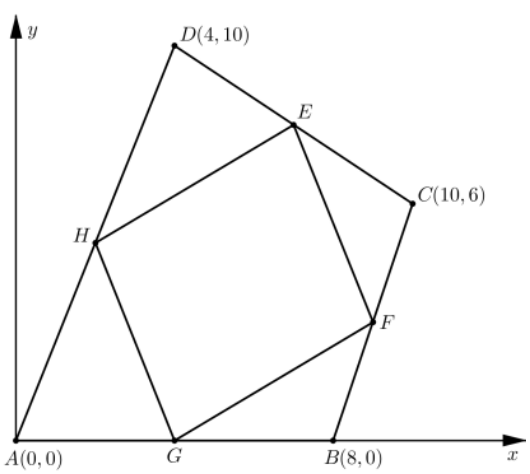
Three of the vertices of a rectangle have coordinates *D*(0, 0), *A*(*a*, 0), and *B*(0, *b*).

1. Find the coordinates of point *C*, the fourth vertex.

2. Prove that the diagonals of the rectangle are congruent.

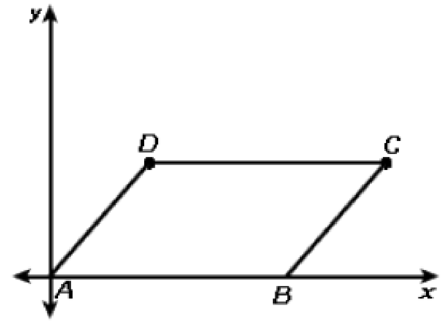
Midpoints of Sides of a Quadrilateral http://www.cpalms.org/Public/PreviewResource/Preview/59184

Show that the quadrilateral formed by connecting the midpoints of the sides of quadrilateral *ABCD* (points *E*, *F*, *G*, and *H*) is a parallelogram.



MAFS.912.G-GPE.2.4 EOC Practice

1. The diagram shows quadrilateral ABCD.



Which of the following would prove that ABCD is a parallelogram?

A. Slope of $\overline{AD}$ = Slope of $\overline{BC}$
Length of $\overline{AD}$ = Length of $\overline{BC}$
B. Slope of $\overline{AD}$ = Slope of $\overline{BC}$
Length of $\overline{AB}$ = Length of $\overline{AD}$
C. Length of $\overline{AD}$ = Length of $\overline{BC}$ = Length of $\overline{DC}$
D. Length of $\overline{AD}$ = Length of $\overline{BC}$ = Length of $\overline{AB}$

2. Given the coordinates of A(3, 6), B(5, 2), and C(9, 4), which coordinates for D make ABCD a square?

A. (6, 7)
B. (7, 8)
C. (7, 9)
D. (8, 7)

3. Jillian and Tammy are considering a quadrilateral $ABCD$. Their task is to prove is a square.
- Jillian says, "We just need to show that the slope of $\overline{AB}$ equals the slope of $\overline{CD}$ and the slope of $\overline{BC}$ equals the slope $\overline{AD}$."
- Tammy says, "We should show that $AC = BD$ and that $(slope\ of\ \overline{AC}) \times (slope\ of\ \overline{BD}) = -1."$

Whose method of proof is valid?

A. Only Jillian's is valid.
B. Only Tammy's is valid.
C. Both are valid.
D. Neither is valid.

4. The vertices of a quadrilateral are M(–1, 1), N(1, –2), O(5, 0), and P(3, 3). Which statement describes Quadrilateral MNOP?

A. Quadrilateral MNOP is a rectangle.
B. Quadrilateral MNOP is a trapezoid.
C. Quadrilateral MNOP is a rhombus but not a square.
D. Quadrilateral MNOP is a parallelogram but not a rectangle.

FS Geometry EOC Review

MAFS.912.G-GPE.2.5

Writing Equations for Parallel Lines http://www.cpalms.org/Public/PreviewResource/Preview/59185

1. In right trapezoid *ABCD*, $\overline{BC} \parallel \overline{AD}$ and $\overline{AD}$ is contained in the line whose equation is $y = -\frac{1}{2}x + 10$.

   a. What is the slope of the line containing $\overline{BC}$? Briefly explain how you got your answer.

   b. Write an equation in **slope-intercept form** of the line that contains $\overline{BC}$ if *B* is located at $(-2, 7)$. Show your work to justify your answer.

2. In rectangle *EFGH*, $\overline{EH} \parallel \overline{FG}$ and $\overline{EH}$ crosses the *y*-axis at (0, -2). If the equation of the line containing $\overline{FG}$ is $x + 3y = 12$, write the equation of the line containing $\overline{EH}$ in **slope-intercept form.** Show your work to justify your answer.

Writing Equations for Perpendicular Lines http://www.cpalms.org/Public/PreviewResource/Preview/59186

1. In right trapezoid *ABCD*, $\overline{AB} \perp \overline{AD}$ and $\overline{AD}$ is contained in the line $y = -\frac{1}{2}x + 10$.

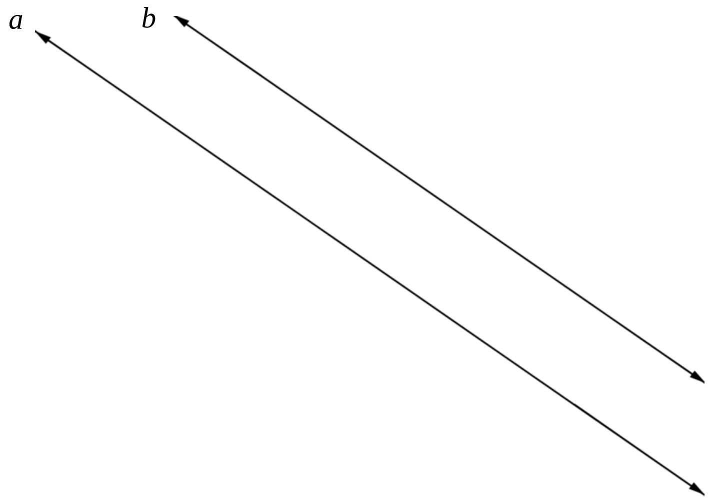
   a. What is the slope of the line containing $\overline{AB}$? Briefly explain how you got your answer.

   b. Write an equation in **slope-intercept form** of the line that contains $\overline{AB}$ if *B* is located at $(-2, 7)$. Show your work to justify your answer.

2. In rectangle *EFGH*, $\overline{EF} \perp \overline{FG}$ and $\overline{EF}$ contains the point (0, -4). If the equation of the line containing $\overline{FG}$ is $2x + 6y = 9$, write the equation of the line containing $\overline{EF}$ in **slope-intercept form.** Show your work to justify your answer.

Proving Slope Criterion for Parallel Lines – One http://www.cpalms.org/Public/PreviewResource/Preview/71891

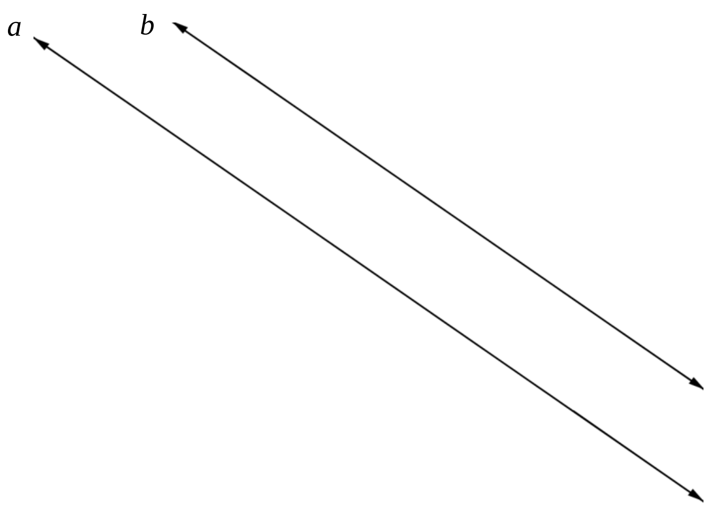
Line *a* is parallel to line *b*. Prove that the slope of line *a* equals the slope of line *b*.



Note: You may draw axes placing the lines in the coordinate plane if you prefer.

Proving Slope Criterion for Parallel Lines – Two http://www.cpalms.org/Public/PreviewResource/Preview/72008

The slope of line *a* equals the slope of line *b*. Prove that line *a* is parallel to line *b*.

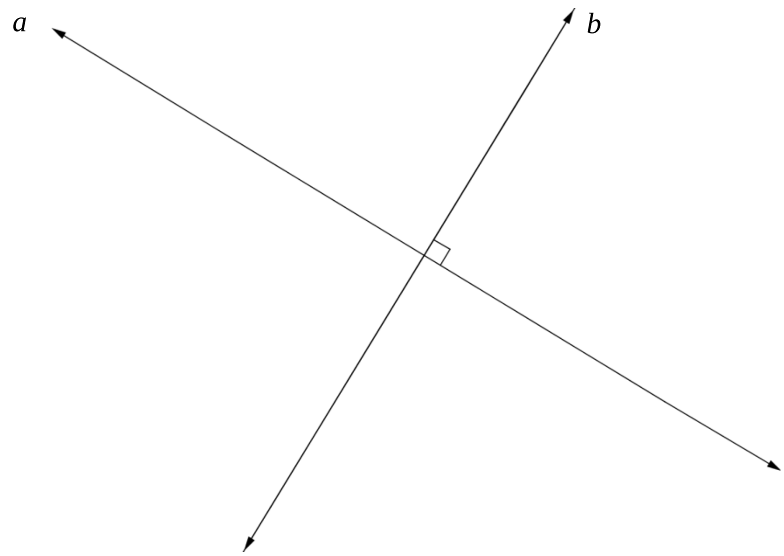


Note: You may draw axes placing the lines in the coordinate plane if you prefer.

FS Geometry EOC Review

Proving Slope Criterion for Perpendicular Lines – One http://www.cpalms.org/Public/PreviewResource/Preview/72047

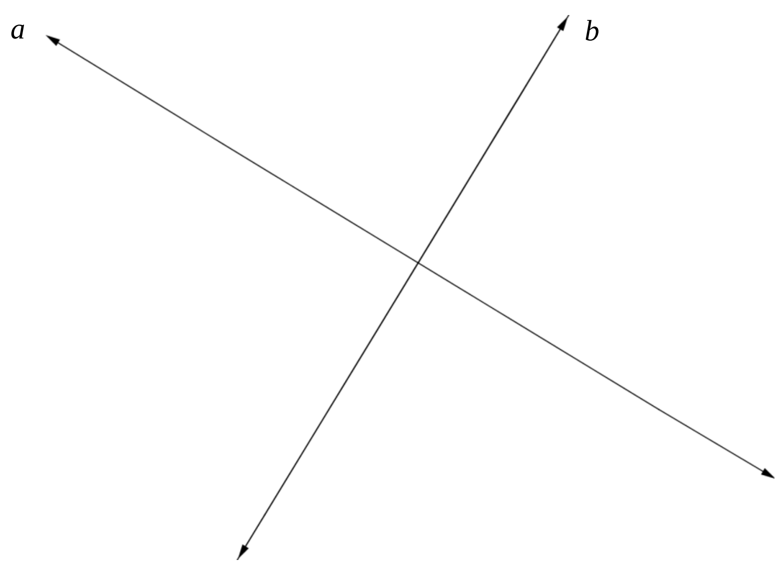
Line *a* is perpendicular to line *b*. Prove that the slopes of line *a* and line *b* are both opposite and reciprocal (or that the product of their slopes is –1).



Note: You may draw axes placing the lines in the coordinate plane if you prefer.

Proving Slope Criterion for Perpendicular Lines – Two http://www.cpalms.org/Public/PreviewResource/Preview/72068

The slope of line *a* and the slope of line *b* are both opposite and reciprocal. Prove that line *a* is perpendicular to line *b*.



Note: You may draw axes placing the lines in the coordinate plane if you prefer.

MAFS.912.G-GPE.2.5 EOC Practice

1. Which statement is true about the two lines whose equations are given below?

$$3x - 5y = -3$$

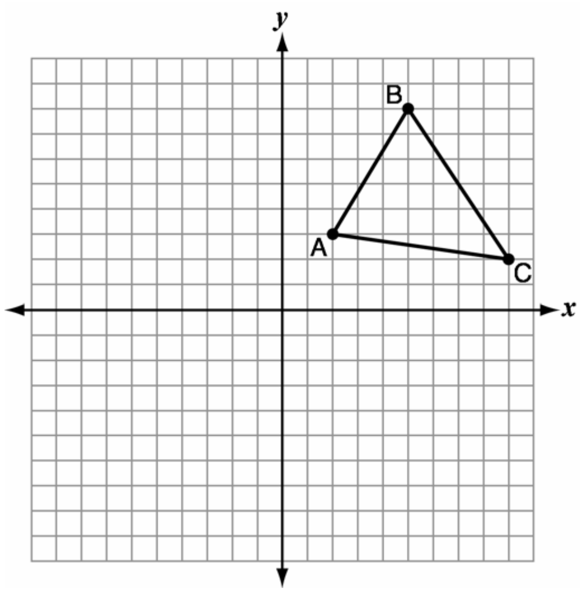
$$-2x + y = -8$$

   A. The lines are perpendicular.
   B. The lines are parallel.
   C. The lines coincide.
   D. The lines intersect, but are not perpendicular.

2. The equation of a line containing one leg of a right triangle is $y = -4x$. Which of the following equations could represent the line containing the other leg of this triangle?

   A. $y = -\frac{1}{4}x$
   B. $y = \frac{1}{4}x + 2$
   C. $y = 4x$
   D. $y = -4x + 2$

3. ΔABC with vertices $A(2, 3)$, $B(5, 8)$, and $C(9, 2)$ is graphed on the coordinate plane below.



Which equation represents the altitude of ΔABC from vertex B?

   A. $y = -11x + 55$
   B. $y = -11x + 63$
   C. $y = 7x - 36$
   D. $y = 7x - 27$

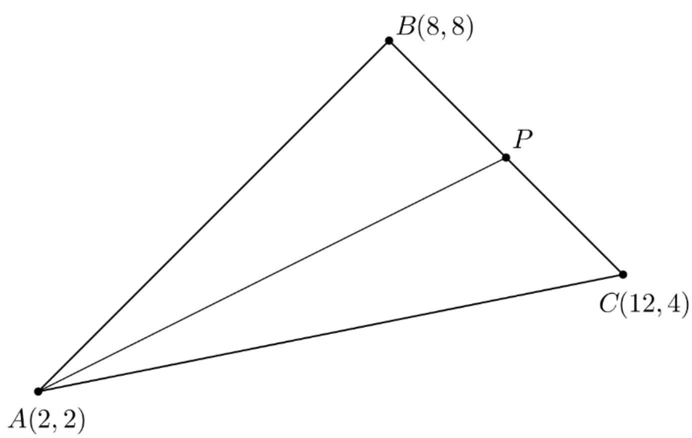
MAFS.912.G-GPE.2.6

Partitioning a Segment http://www.cpalms.org/Public/PreviewResource/Preview/71103

Given *M*(-4, 7) and *N*(12, -1), find the coordinates of point *P* on $\overline{MN}$ so that *P* partitions $\overline{MN}$ in the ratio 1:7 (i.e., so that *MP*:*PN* is 1:7). Show all of your work and explain your method and reasoning.

Centroid Coordinates http://www.cpalms.org/Public/PreviewResource/Preview/71108

In ΔABC, $\overline{AP}$ is a median. Find the exact coordinates of a point, *D*, on $\overleftrightarrow{AP}$ so that $AD{:}\,DP = 2{:}\,1$.
Show all of your work and explain your method and reasoning.

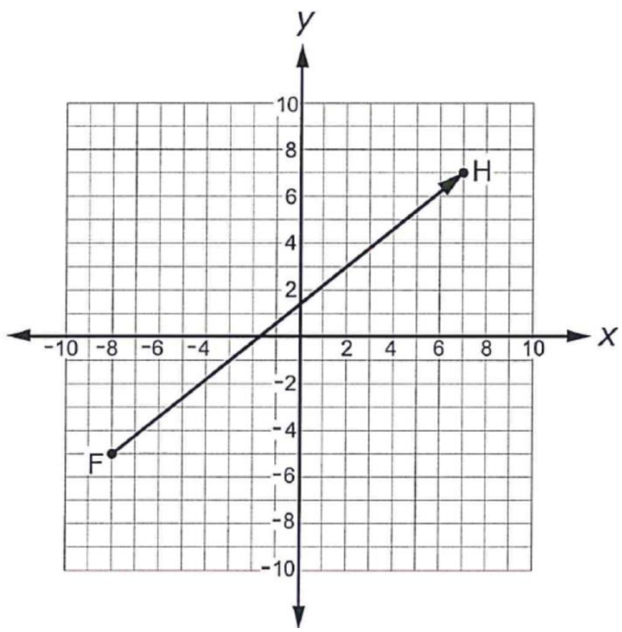


MAFS.912.G-GPE.2.6 EOC Practice

1. Given $A(0,0)$ and $B(60,60)$, what are the coordinates of point M that lies on segment AB, such that $AM:MB = 2:3$?

   A. (24, 24)
   B. (24, 36)
   C. (40, 40)
   D. (40, 90)

2. Point G is drawn on the line segment so that the ratio of FG to GH is 5 to 1. What are the coordinates of point G?

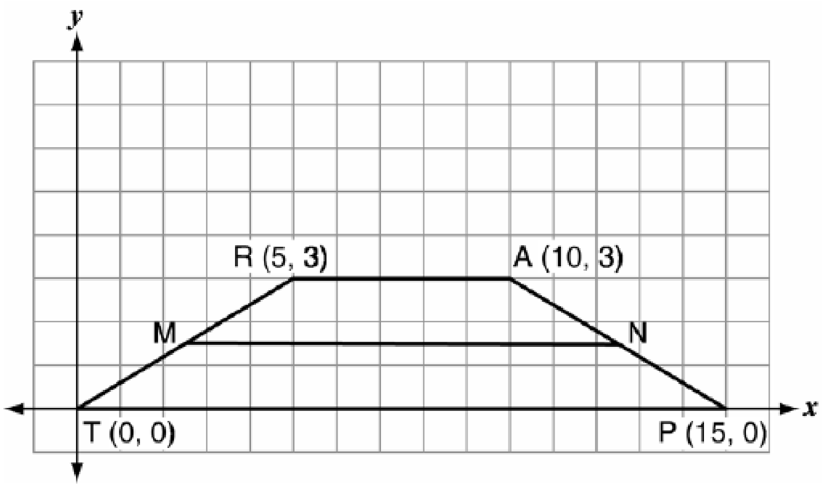


   A. (4, 4.6)
   B. (4.5, 5)
   C. (−5.5, −3)
   D. (−5, −2.6)

3. A city map is placed on a coordinate grid. The post office is located at the point $P(5,35)$, the library is located at the point $L(15,10)$, and the fire station is located at the point $F(9,25)$. What is the ratio of the length of $\overline{PF}$ to the length of $\overline{LF}$?

   A. $2:3$
   B. $3:2$
   C. $2:5$
   D. $3:5$

4. Trapezoid TRAP is shown below.



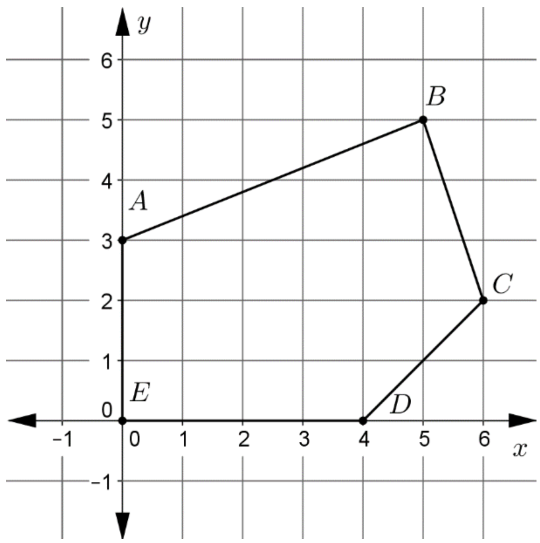
What is the length of midsegment $\overline{MN}$?

A. 10
B. $\frac{25}{2}$
C. $\sqrt{234}$
D. 100

MAFS.912.G-GPE.2.7

Pentagon's Perimeter http://www.cpalms.org/Public/PreviewResource/Preview/55445

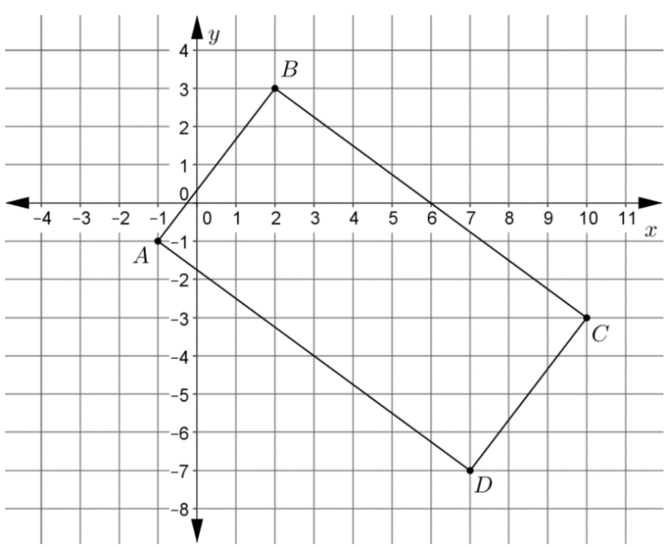
Find the perimeter of polygon *ABCDE* with vertices *A*(0, 3), *B*(5, 5), *C*(6, 2), *D*(4, 0) and *E*(0, 0). Show your work.



Perimeter and Area of a Rectangle http://www.cpalms.org/Public/PreviewResource/Preview/55447

Find the perimeter and the area of rectangle *ABCD* with vertices *A*(-1, -1), *B*(2, 3), *C*(10, -3) and *D*(7, -7). Show your work.

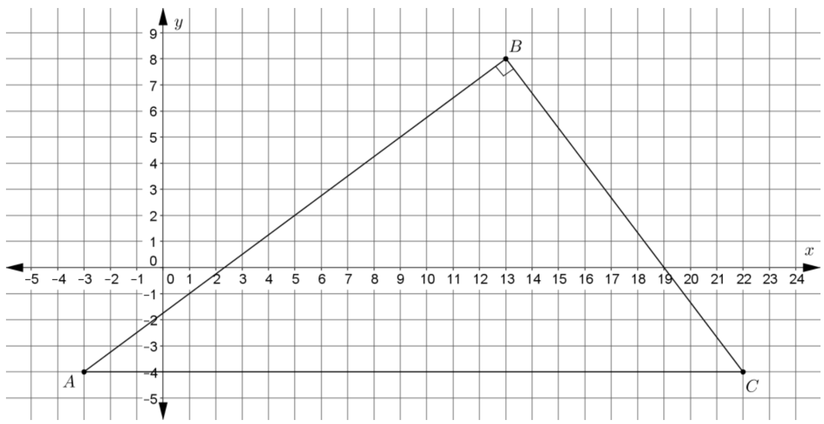
Perimeter _______________ Area _______________



Perimeter and Area of a Right Triangle http://www.cpalms.org/Public/PreviewResource/Preview/55448

Find the perimeter and the area of right triangle *ABC* with vertices *A*(-3, -4), *B*(13, 8) and *C*(22, -4). Show your work.

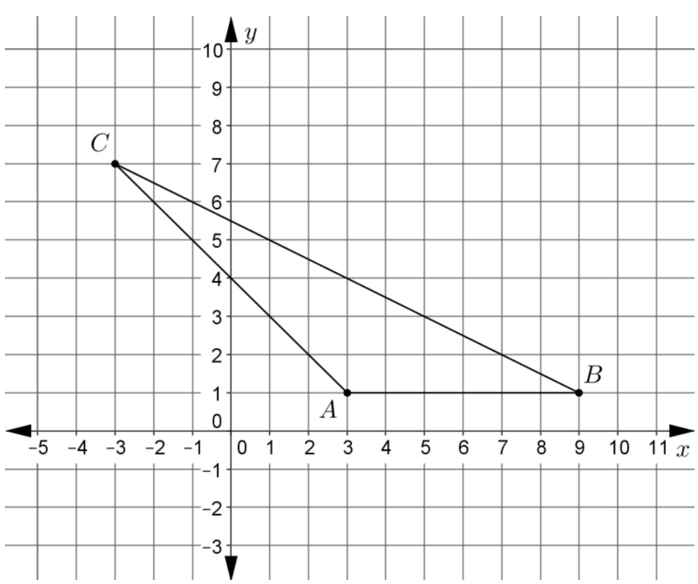
Perimeter _______________ Area _______________



Perimeter and Area of an Obtuse Triangle http://www.cpalms.org/Public/PreviewResource/Preview/55449

Find the perimeter and the area of Δ*ABC* with vertices *A*(3, 1), *B*(9, 1) and *C*(-3, 7). Show your work. Round to the nearest tenth if necessary.

Perimeter _________________ Area __________________



MAFS.912.G-GPE.2.7 EOC

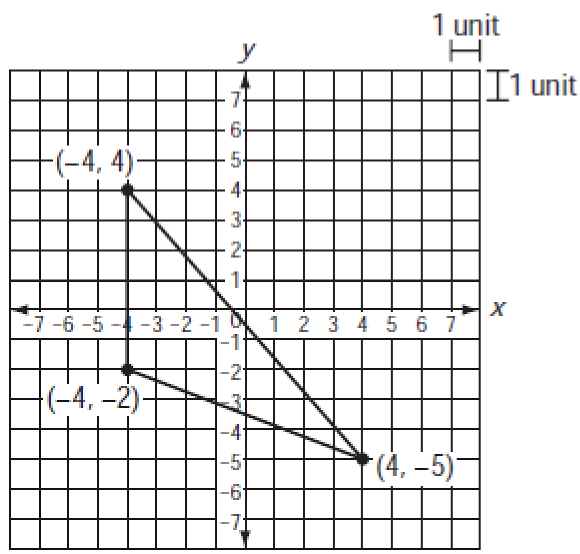
1. Two of the vertices of a triangle are (0, 1) and (4, 1). Which coordinates of the third vertex make the area of the triangle equal to 16?

   A. (0, -9)
   B. (0, 5)
   C. (4, -7)
   D. (4, -3)

2. On a coordinate plane, a shape is plotted with vertices of (3, 1), (0, 4), (3, 7), and (6, 4). What is the area of the shape if each grid unit equals one centimeter?

   A. 18 cm^2
   B. 24 cm^2
   C. 36 cm^2
   D. 42 cm^2

3. A triangle is shown on the coordinate plane below.



   What is the area of the triangle?

   A. 12 square units
   B. 24 square units
   C. 36 square units
   D. 48 square units