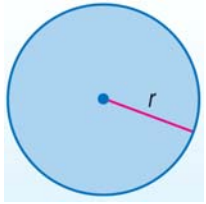
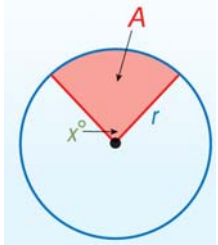
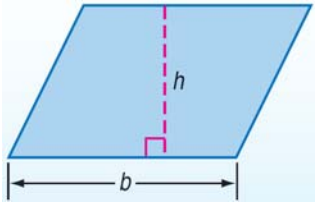
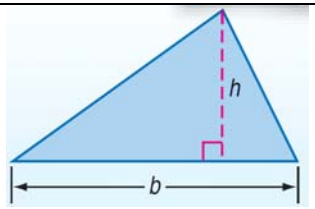
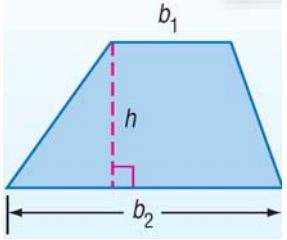
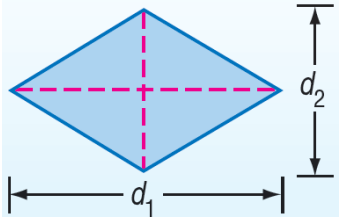
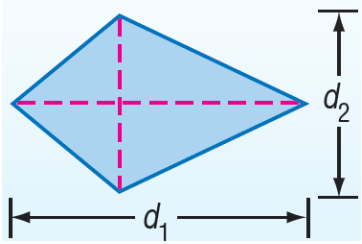
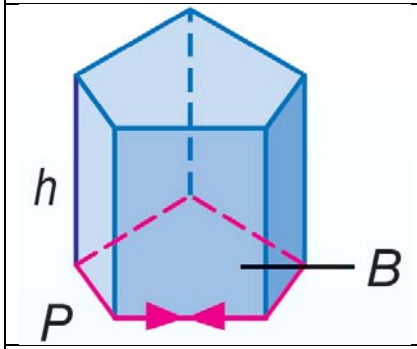
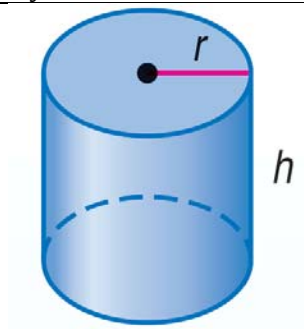
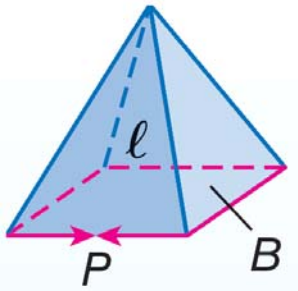
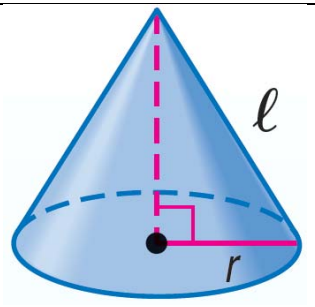
Geometry Unit 10 Note Sheets

Date	Name of Lesson	
	1.6 Two-Dimensional Figures	
	11.3 Areas of Circles and Sectors	
	Quiz	
	11.1 Areas of Parallelograms and Triangles 11.2 Areas of Trapezoids, Rhombi and Kites	
	11.4 Areas of Regular Polygons	
	11.4 Area Composite Figures	
	Quiz	
	11.5 Area of Similar Figures	
	1.7, 12.1 Three-Dimensional Figures	
	12.8 Congruent and Similar Solids	
	Net Project	
	Practice Test	
	Unit Test	

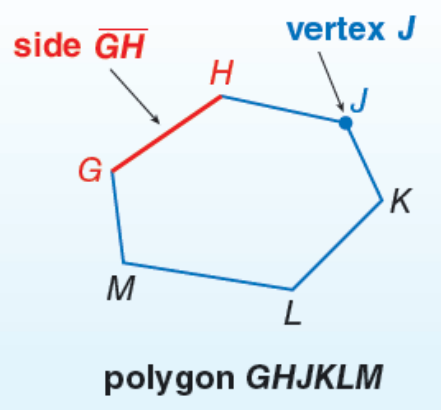
Area of Figures Review

Circle	Sector of a Circle	Parallelogram	Triangle	Trapezoid	Rhombi and Kites
					 

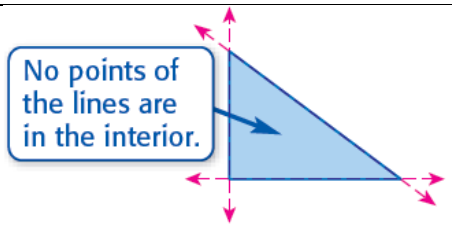
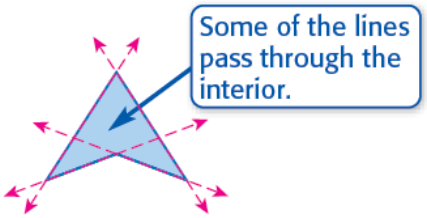
Surface Area of Figures

Prism	Cylinder	Pyramid	Cone
			

1.6 Two-Dimensional Figures Notes

Polygons	

Polygons	Not Polygons
	

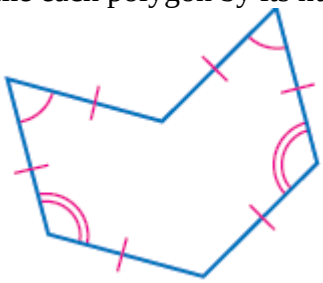
Concave	Convex
	

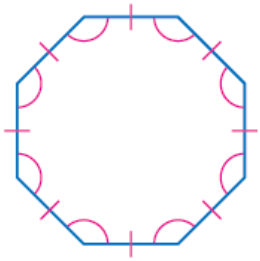
n-gon
equilateral polygon
equiangular polygon
regular polygon

Number of Sides	Polygon
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagon
10	decagon
11	hendecagon
12	dodecagon
n	*n*-gon

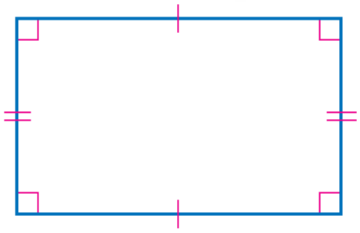
Guided Practice

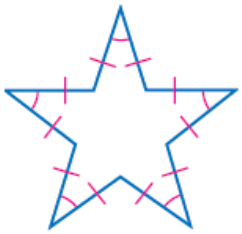
Name each polygon by its number of sides. Then classify it as *concave* or *convex* and *regular* or *irregular*.

1. 

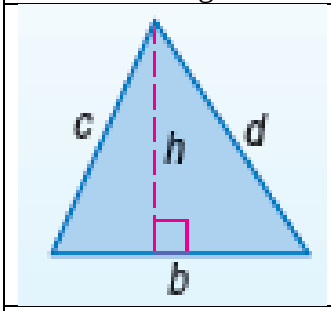
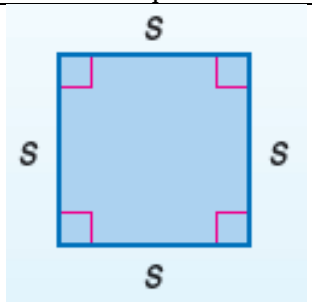
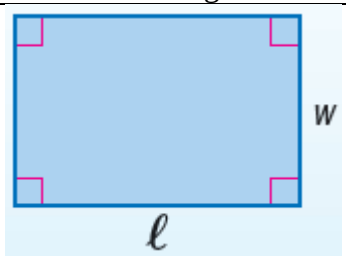
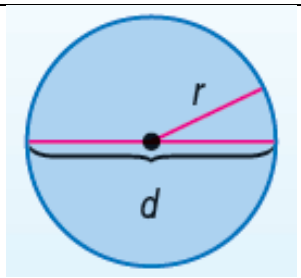
2. 

Your turn

3. 

4. 

perimeter
circumference
area

Perimeter, Circumference, and Area			
Triangle	Square	Rectangle	Circle
			

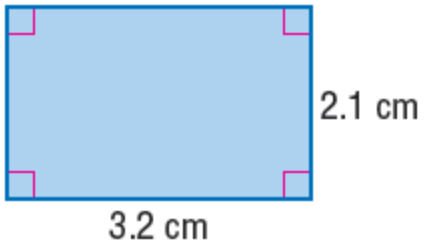
P = perimeter of polygon A = area of figure C = circumference

b = base, h = height ℓ = length, w = width r = radius, d = diameter

Guided Practice

Find the perimeter or circumference and area of each figure.

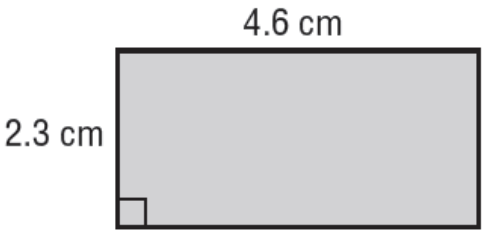
5.



6.

Your Turn

7.



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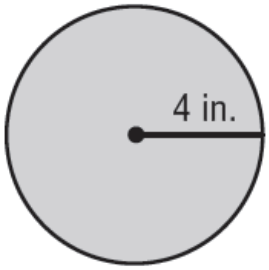
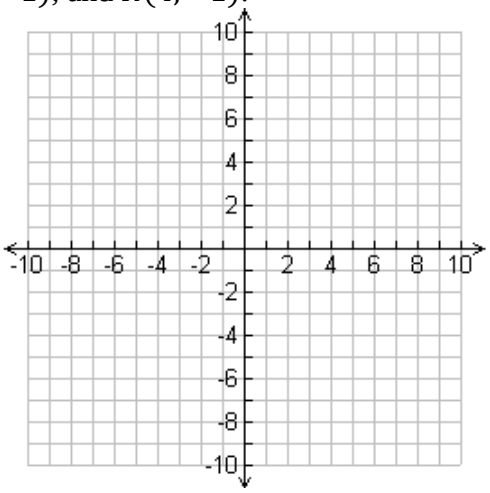


Distance Formula Reminder

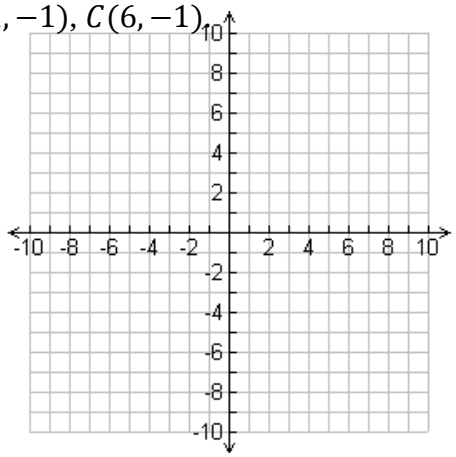
Guided Practice

9. Find the perimeter and area of ΔPQR with vertices $P(-1, 3)$, $Q(-3, -1)$, and $R(4, -1)$.



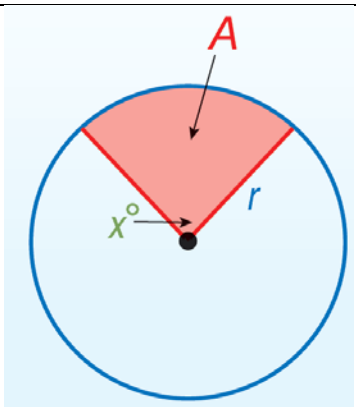
Your Turn

10. Find the perimeter and area of ΔABC with vertices $A(-1, 4)$, $B(-1, -1)$, $C(6, -1)$.



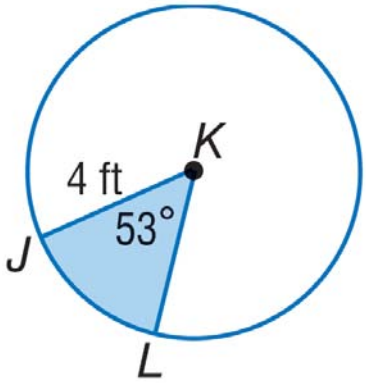
11.3 Area of Sectors of Circles Notes

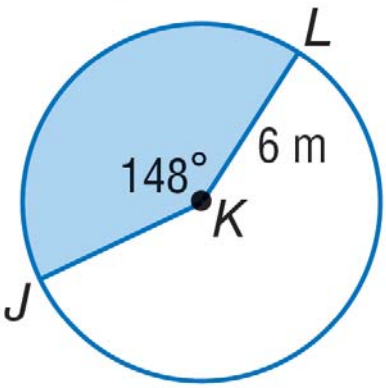
Reminder – Formula for Area of a circle:

Area of a Sector	

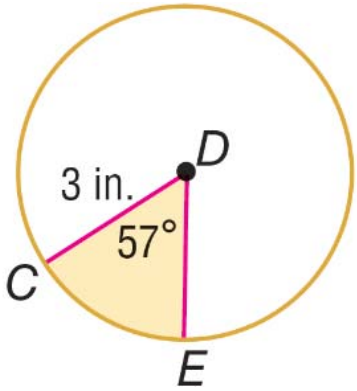
Guided Practice

Find the area of each shaded section. Round to the nearest tenth, if necessary.

1. 

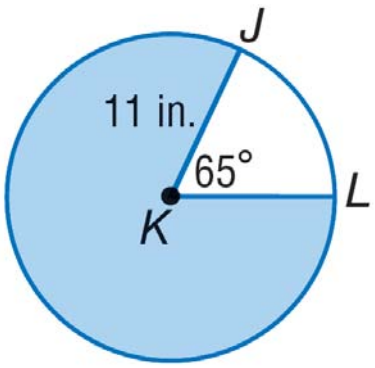
2. 

Your Turn

3. 

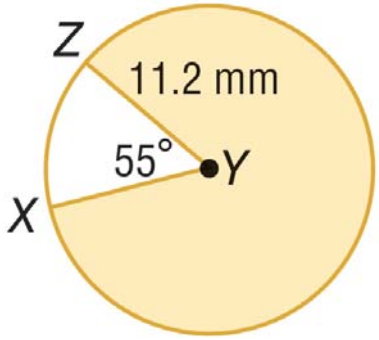
Guided Practice

4.



Your Turn

5.



Guided Practice

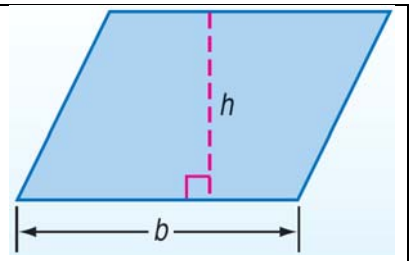
6. A circular pizza has a diameter of 12 inches and is cut into 8 congruent slices. What is the area of one slice to the nearest hundredth?

Your Turn

7. A pie has a diameter of 9 inches and is cut into 10 congruent slices. What is the area of one slice to the nearest hundredth?

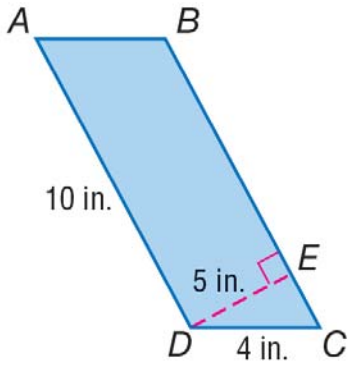
11.1 Areas of Parallelograms and Triangles Notes

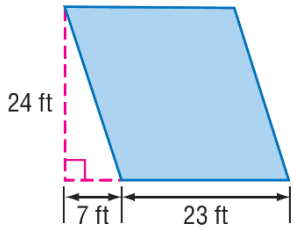
Review – Define Parallelogram _____

Area of a Parallelogram	

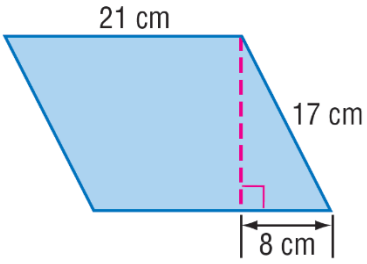
Guided Practice

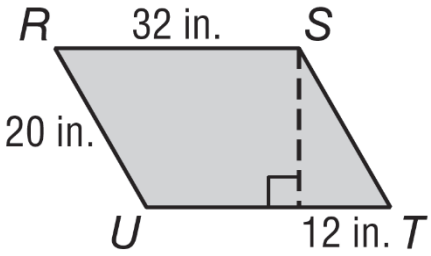
Find the perimeter and the area of the figure.

1. 

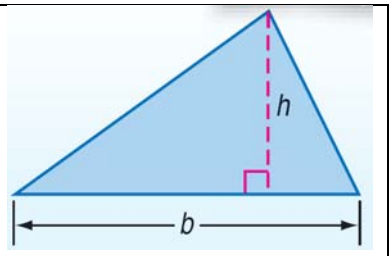
2. 

Your Turn

3. 

4. 

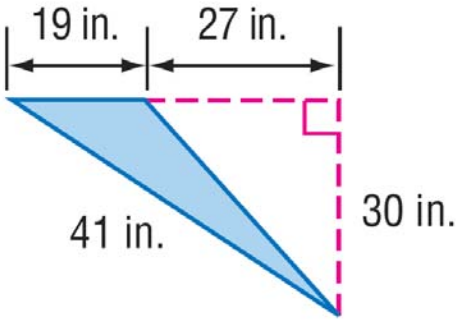
Area of a Triangle



Guided Practice

Find the perimeter of the figure.

5.



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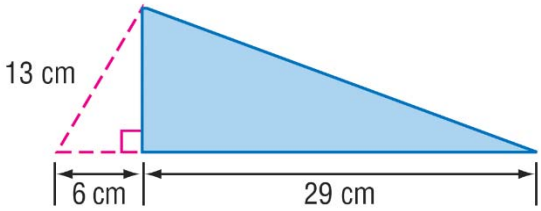
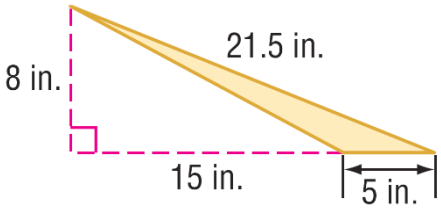


Your Turn

7.



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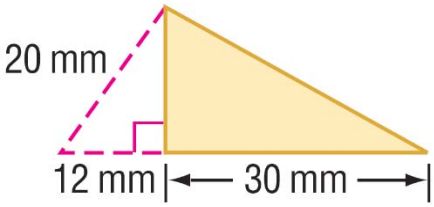
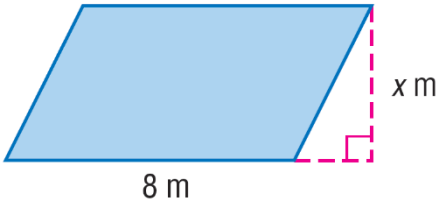


Guided Practice

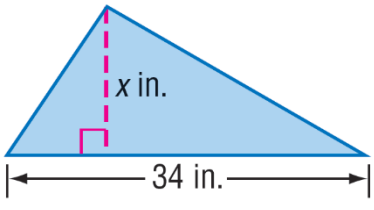
Find *x*.

9. $A = 148 \text{ m}^2$



Your Turn

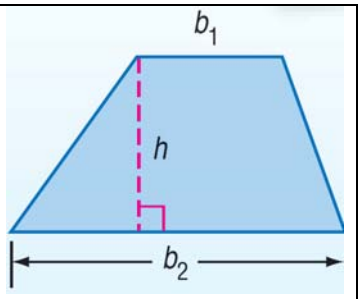
10. $A = 357 \text{ in}^2$



11.2 Areas of Trapezoids, Rhombi, and Kites Notes

Review – Define Trapezoid _____

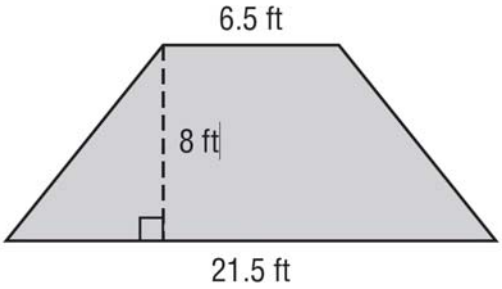
_____

Area of a Trapezoid	

Guided Practice

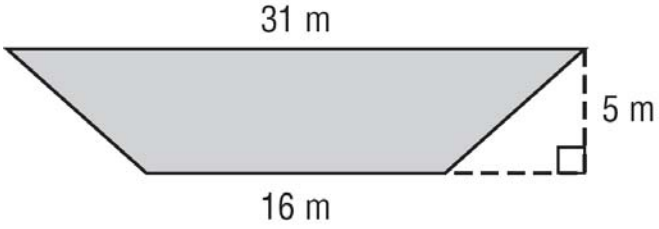
Find the area of the figure.

1.



Your Turn

2.

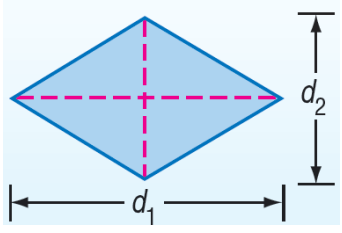
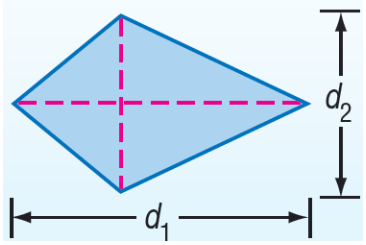


Review – Define Rhombus _____

_____

Define Kite _____

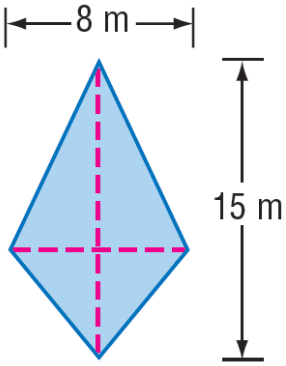
_____

Area of a Rhombus or Kite		
		

Guided Practice

Find the area of the figure.

3.



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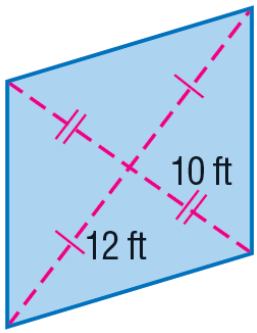
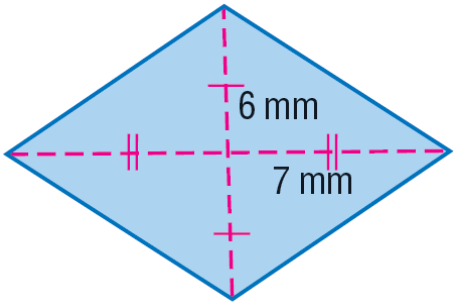


Your Turn

5.



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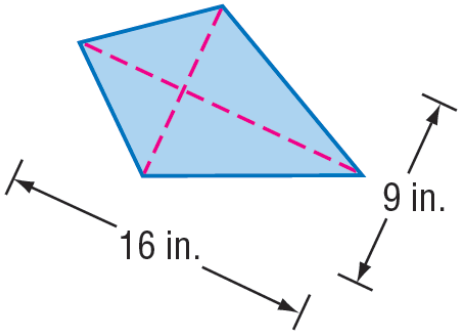


Guided Practice

7. One diagonal of a rhombus is half as long as the other diagonal. If the area of the rhombus is 64 square inches, what are the lengths of the diagonals?

Your Turn

8. One diagonal of a kite is twice as long as the other diagonal. If the area of the kite is 240 square inches, what are the lengths of the diagonals?

11.4 Areas of Regular Polygons Notes

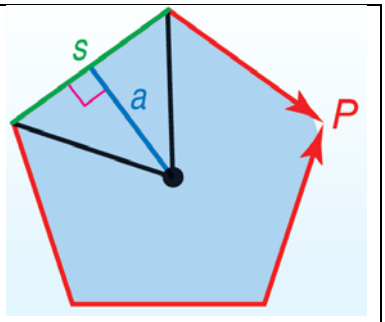
Definitions

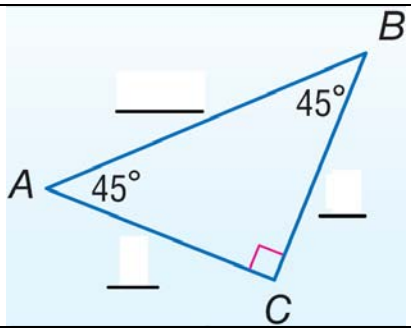
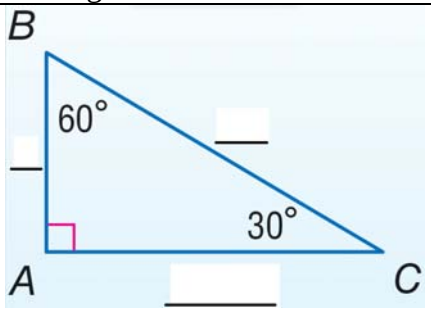
Polygon _____

_____

Regular Polygon _____

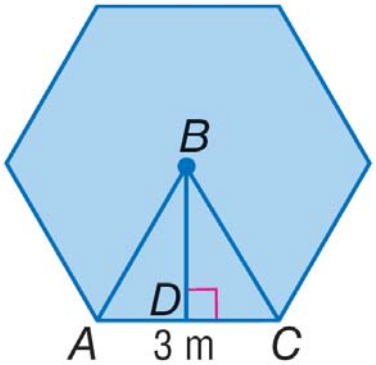
_____

Area of a Regular Polygon	

Review of 45-45-90 and 30-60-90 Triangles	
	

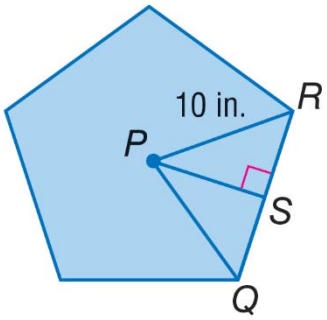
Guided Practice

Find the area of each regular polygon.

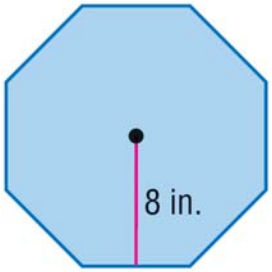
1. 

Guided Practice

2. a = 5.88
   s = 8.10

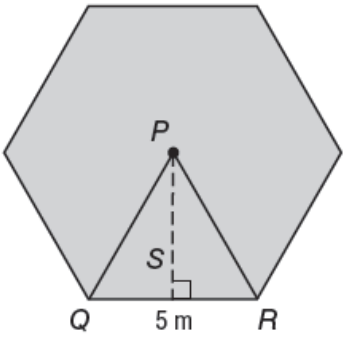


3. s = 6.62

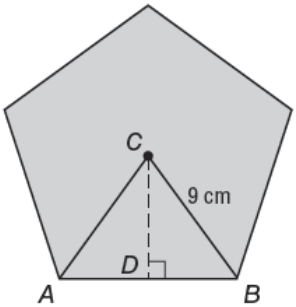


Your Turn

4. a = 4.33



5. a = 7.28
   s = 10.58



11.4 Area of Composite Figures Notes

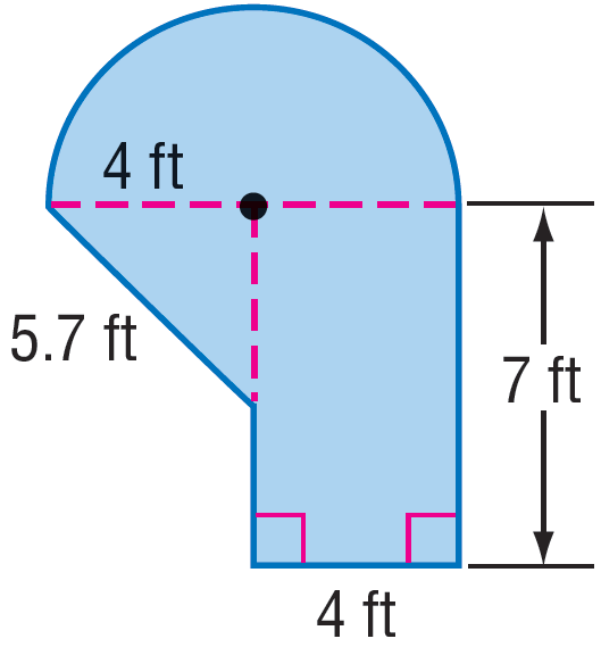
Vocabulary

Composite Figures _____

_____

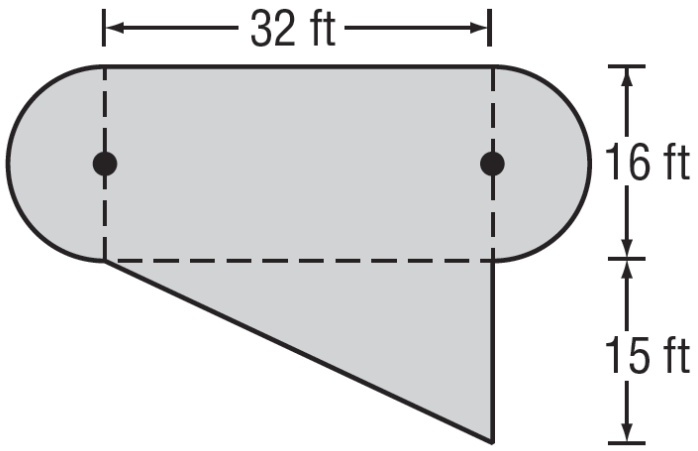
Guided Practice

1. The dimensions of a putting green at a miniature golf course are shown. How many square feet of carpet are needed to cover this green?



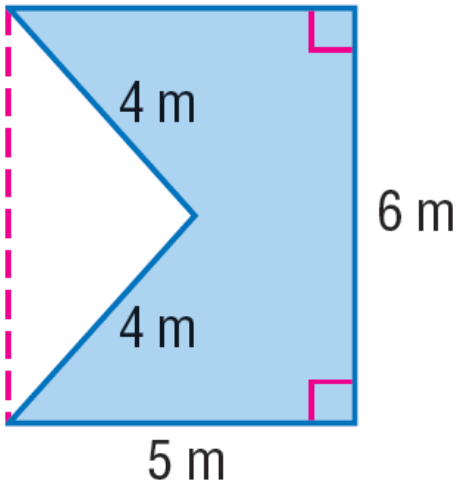
Your Turn

2. The dimensions of an irregular shaped pool are shown. What is the area of the surface of the pool?



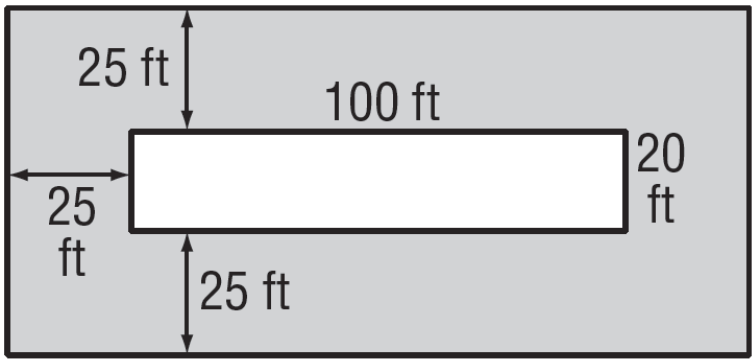
Guided Practice

3. Find the area of the figure. Round to the nearest tenth of necessary.

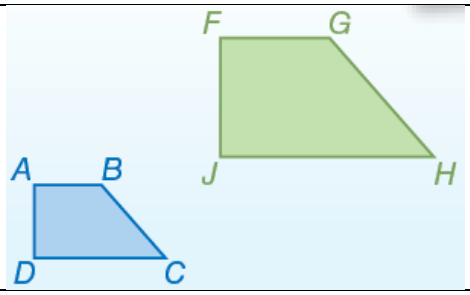


Your Turn

4. Find the area of the shaded figure.

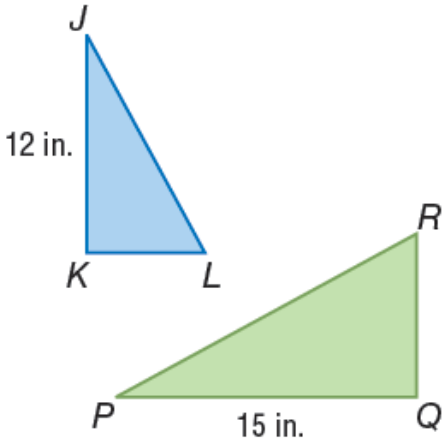


11.5 Area of Similar Figures Notes

Areas of Similar Polygons	
	

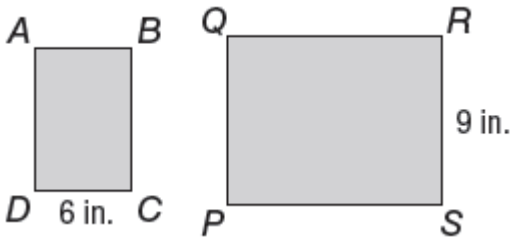
Guided Practice

1. If $\Delta JKK \sim \Delta PQR$ and the area of ΔJKL is 30 square inches, find the area of ΔPQR.

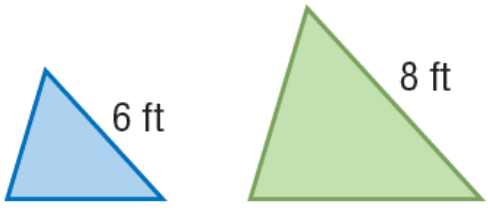


Your Turn

2. If $ABCD \sim PQRS$ and the area of $ABCD$ is 48 square inches, find the area of $PQRS$.



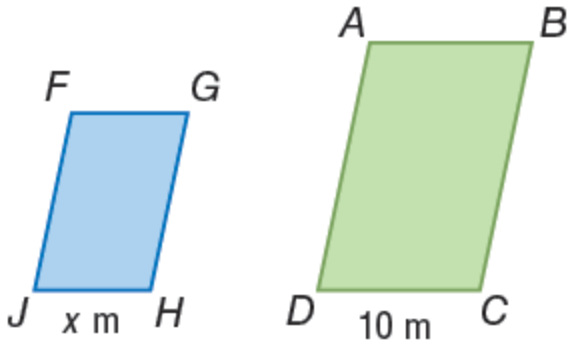
3. For each pair of similar figures, find the area of the figure on the right.



$A = 13.5 \text{ ft}^2$

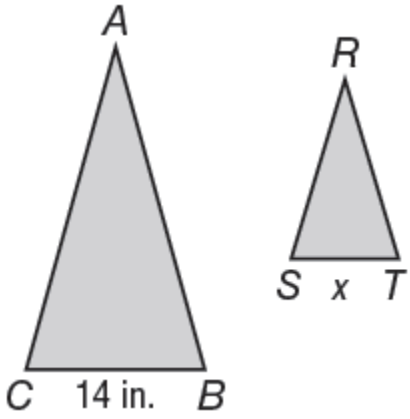
Guided Practice

4. The area of $ABCD$ is 150 square meters. The area of $FGHJ$ is 54 square meters. If $ABCD \sim FGHJ$, find the scale factor of $FGHJ$ to $ABCD$ and the value of x.

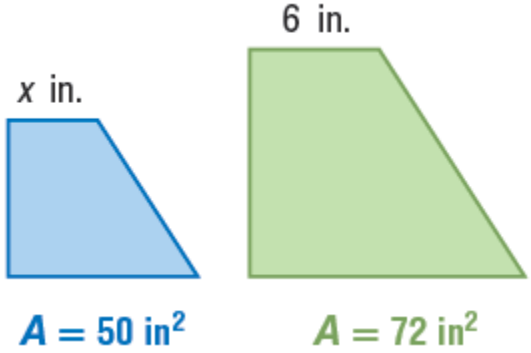


Your Turn

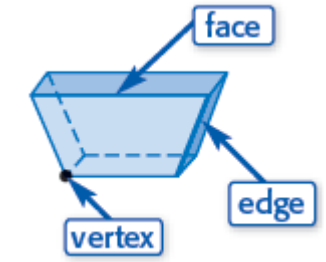
5. The area of ΔABC is 98 square inches. The area of ΔRST is 50 square inches. If $\Delta ABC \sim \Delta RST$, find the scale factor from ΔABC to ΔRST and the value of x.

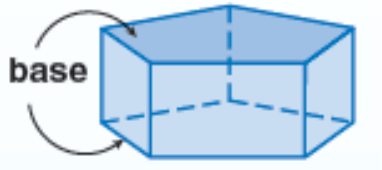
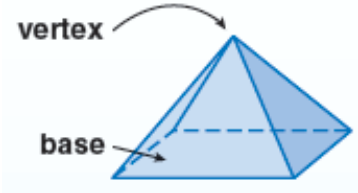


6. For each pair of similar figures, use the given areas to find the scale factor of the left figure to the right figure. Then find x.

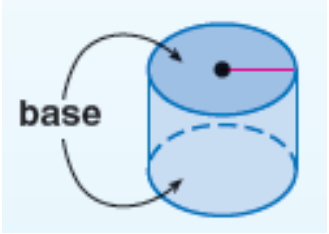
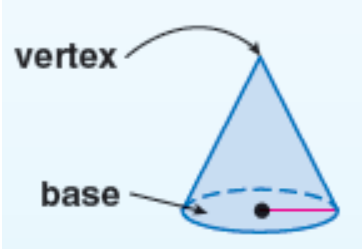
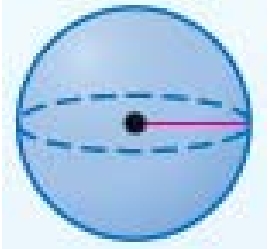


1.7, 12.1 Three-Dimensional Figures Notes

Identify Three-Dimensional Figures	
polyhedron	
face	
edges	
vertex	

Types of Polyhedrons	
Prism	Pyramid
	

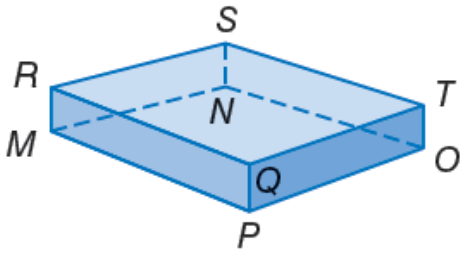
Polyhedrons or *polyhedral* are named by the shape of their bases.

Non-Polyhedron Solids		
Cylinder	Cone	Sphere
		

Guided Practice

Determine whether each solid is a polyhedron. Then identify the solid. If it is a polyhedron, name the bases, faces, edges and vertices.

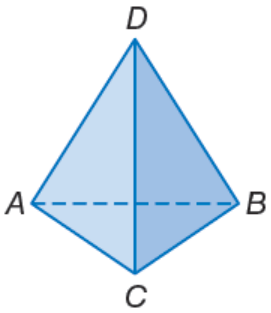
1.



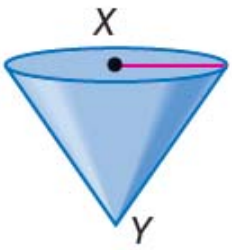
2.

You Turn

3.



4.



Cross Section

Guided Practice

Describe the cross section.

5.

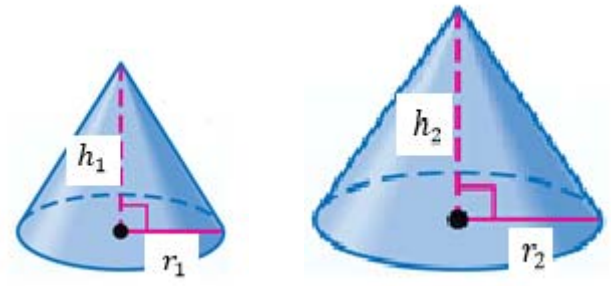
6.

You Turn

7.

8.

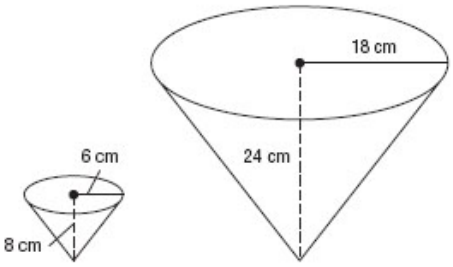
12.8 Congruent and Similar Solids Notes

Similar Solids	
	

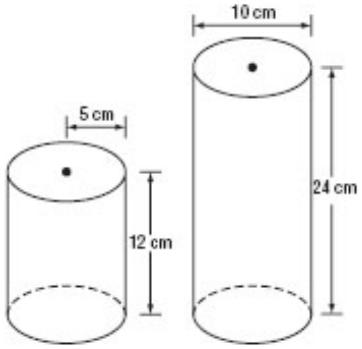
Guided Practice

Determine whether each pair of solids is *similar, congruent, or neither*. If the solids are similar, state the scale factor.

1.

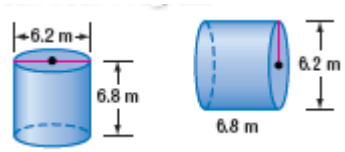


2.

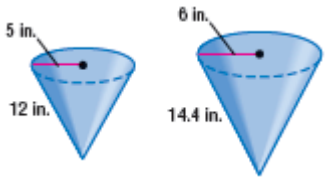


Your Turn

3.



4.



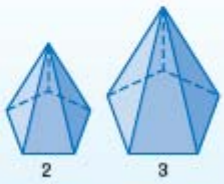
Theorem 12.1 — For Your FOLDABLE

Words If two similar solids have a scale factor of $a:b$, then the surface areas have a ratio of $a^2:b^2$, and the volumes have a ratio of $a^3:b^3$.

Examples

scale factor	2:3
ratio of surface areas	4:9
ratio of volumes	8:27

Models



Guided Practice

1. Two similar pyramids have slant heights of 6 inches and 12 inches. What is the ration of the surface area of the small pyramid to the surface area of the large pyramid?

2. Two similar cylinders have heights of 35 meters and 25 meters. What is the ratio of the volume of the large cylinder to the volume of the small cylinder?

3. Two similar hexagonal prism have volumes of 250 cubic feet and 2 cubic feet. What is the ratio of the heights of the large hexagonal prism to the small hexagonal prism?

Your Turn

4. Two similar pyramids have slant heights of 15 inches and 16 inches. What is the ration of the surface area of the small pyramid to the surface area of the large pyramid?

5. Two similar cylinders have heights of 14 meters and 6 meters. What is the ratio of the volume of the large cylinder to the volume of the small cylinder?

6. Two similar hexagonal prism have volumes of 125 cubic feet and 27 cubic feet. What is the ratio of the heights of the large hexagonal prism to the small hexagonal prism?