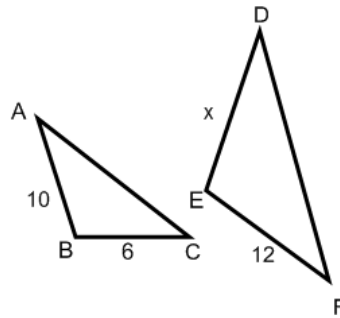


16-17 ACP Geometry – Final Exam REVIEW

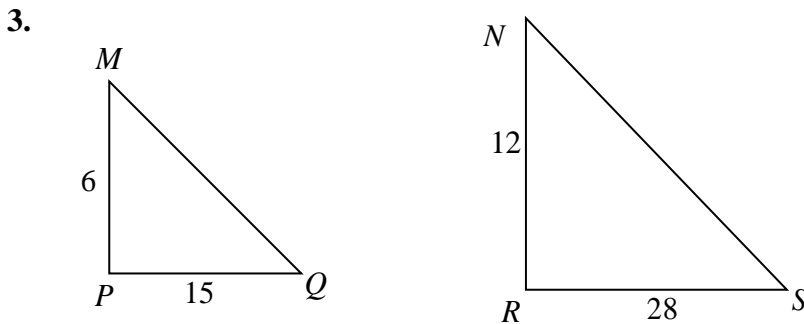
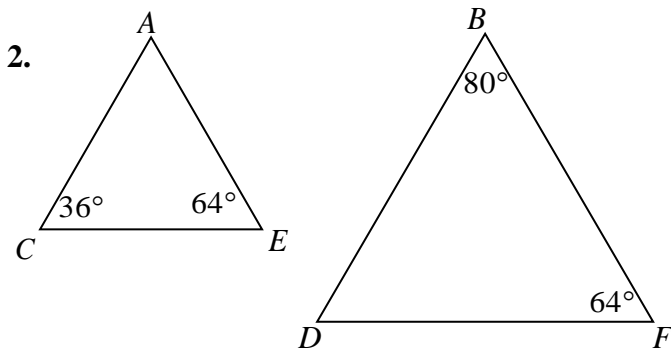
Chapter 8 – Similarity

1. Given $\triangle ABC \sim \triangle DEF$. Find the value of x .



	/	/	
	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Are the following triangles similar? If so, give a reason and write a similarity statement.



4. List the ways you can prove two triangles similar.

5. $\triangle EKN$ is similar to $\triangle OHT$. If $m\angle K = 49^\circ$ and $m\angle T = 73^\circ$, find $m\angle E$.

6. Solve the following proportion: $\frac{x-1}{3} = \frac{x+2}{6}$

7. A scale model of a new school shows the tables to be 6 in long. The actual tables will be 72 inches long. Find the ratio of the length of the model to the length of the actual table.

8. Find the geometric mean of the following, rounded to the nearest tenth.

a) 6 and 18

b) 7 and 125

c) 9 and 36

9. $\triangle LUV$ is similar to $\triangle GEO$. The perimeter of $\triangle LUV$ is 45 in. The perimeter of $\triangle GEO$ is 105 in.

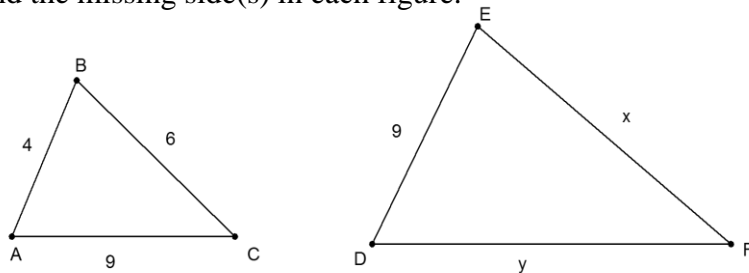
Find:

a) their similarity ratio

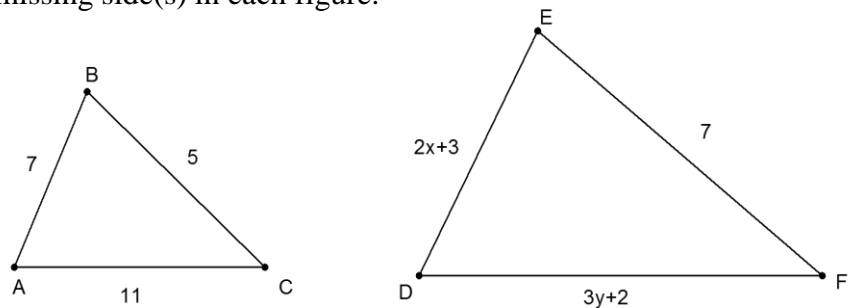
b) the ratio of their areas

10. Two figures are similar with a similarity ratio of $4:5$. The area of the larger figure is 475 in^2 . Find the area of the smaller figure.

11. The triangles are similar. Find the missing side(s) in each figure.

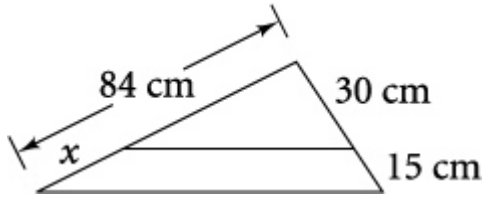


12. The triangles are similar. Find the missing side(s) in each figure.

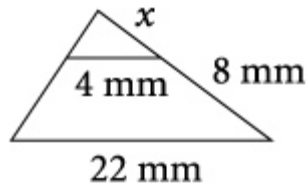


For #13 – 15, the triangles are similar. Find the missing lengths.

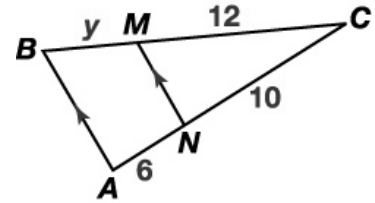
13.



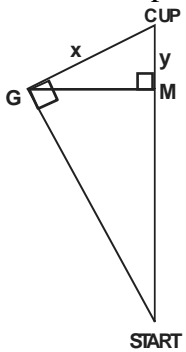
14.



15.



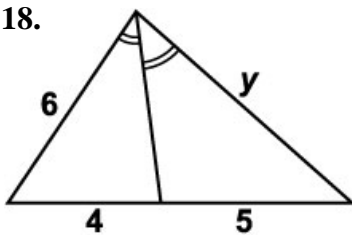
16. At a golf course, Maria drove her ball 192 yd straight toward the cup. Her brother Gabriel drove his ball straight 240 yd, but not toward the cup. The diagram shows the results. Find x and y , their remaining distances from the cup.



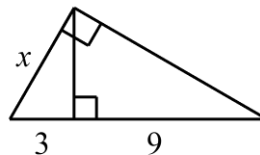
17. Joan places a mirror 24 ft from the base of a tree. When she stands 3 ft from the mirror, she can see the top of the tree reflected in it. If her eyes are 5 ft above the ground, how tall is the tree? (*Draw the situation described and explain why the triangles are similar*)

Find the missing values.

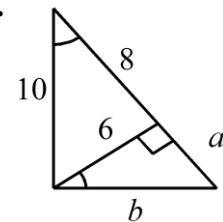
18.



19.



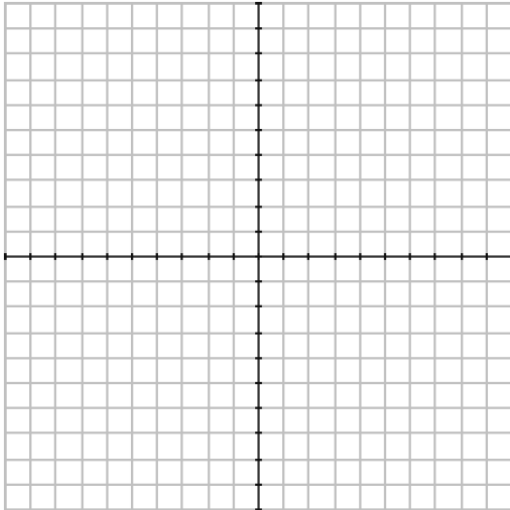
20.



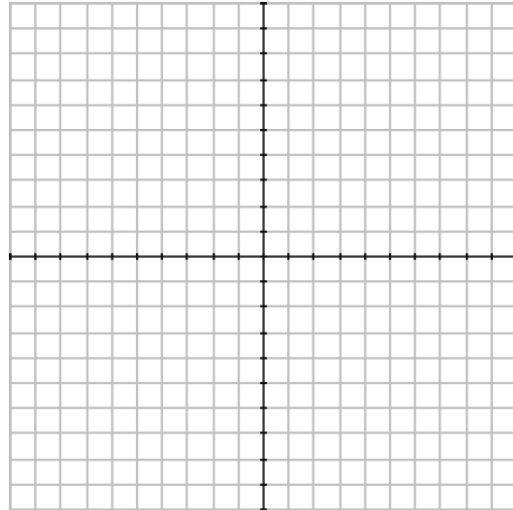
Chapter 12 – Transformations

Coordinate Geometry Given points $J(1, 4)$, $A(3, 5)$, and $R(2, 1)$, draw $\triangle JAR$ and its reflection image in each line.

1. The x -axis



2. The y -axis



3. What is the reflection image of $(5, -3)$ in the y -axis?

A. $(5, 3)$

B. $(-5, 3)$

C. $(-5, -3)$

D. $(-3, 5)$

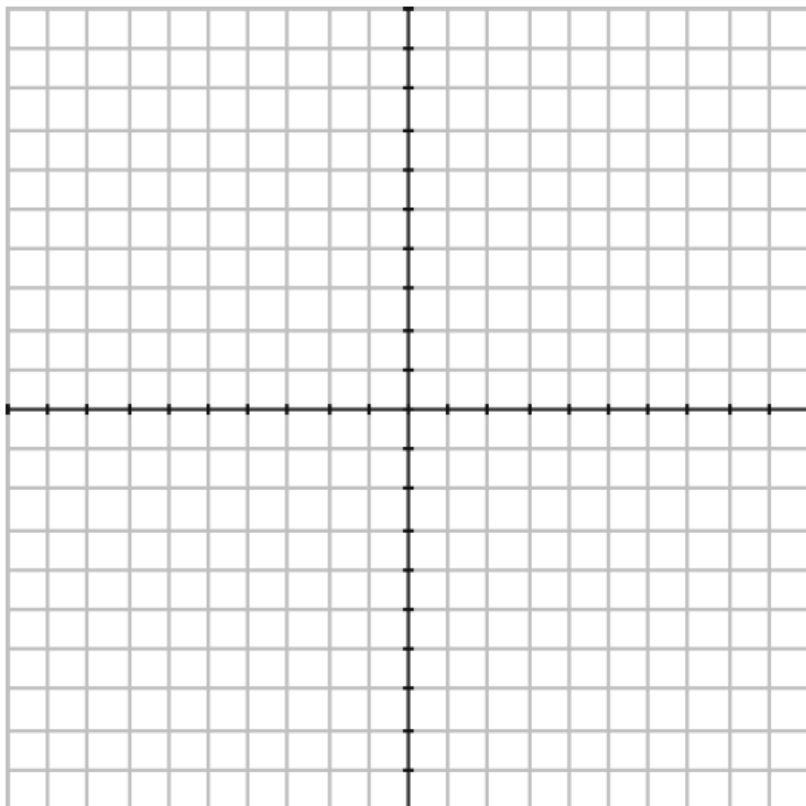
4. Given points $S(6,1)$, $U(2,5)$, and $B(-1,2)$ draw the triangle in the coordinate plane and reflect the image in each line:

a. $y=1$

b. $x=-1$

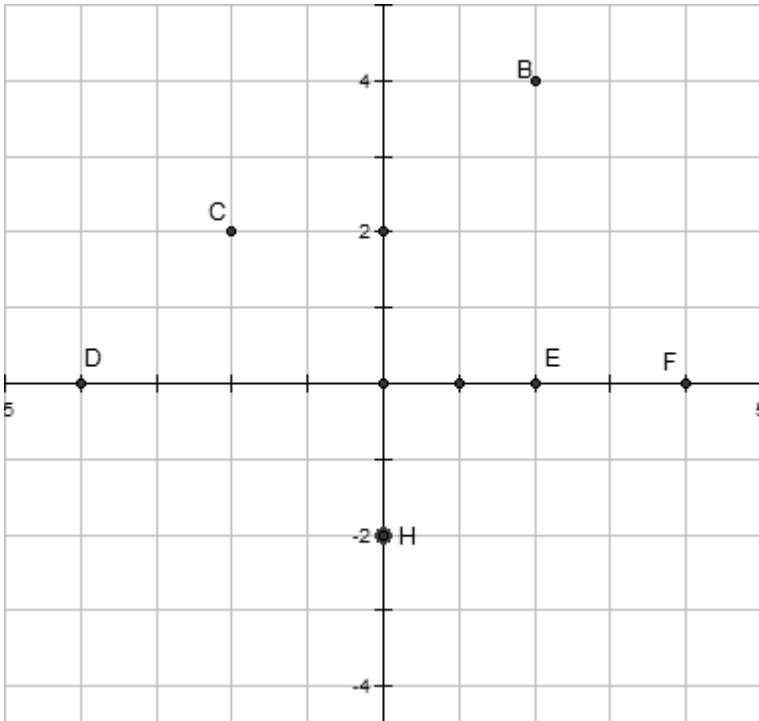
c. the y -axis

d. the x -axis



Use the diagram below to answer questions #5-8

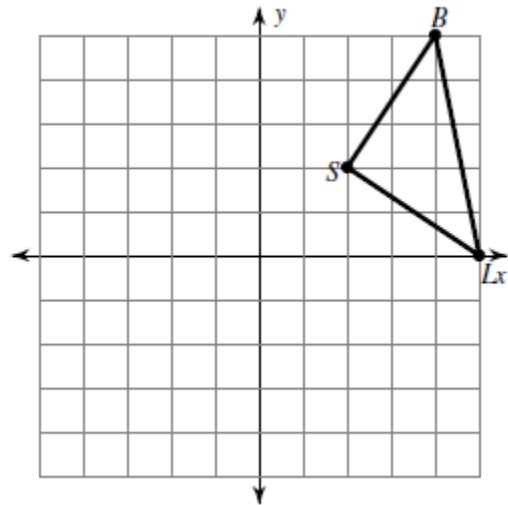
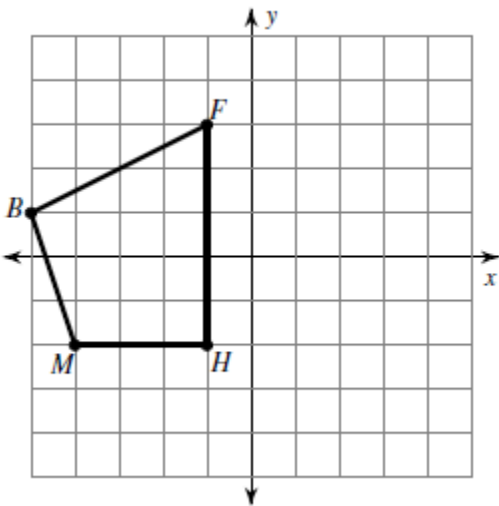
5. Identify the image of C under the translation $\langle 4, -2 \rangle$
6. Identify the vector that describes the translation $F \rightarrow B$
7. Identify the image of H under the translation $\langle -2, 4 \rangle$
8. What vector describes the translation $D \rightarrow H$



Draw the image of each figure for the given rotation about P . Label the vertices of the image.

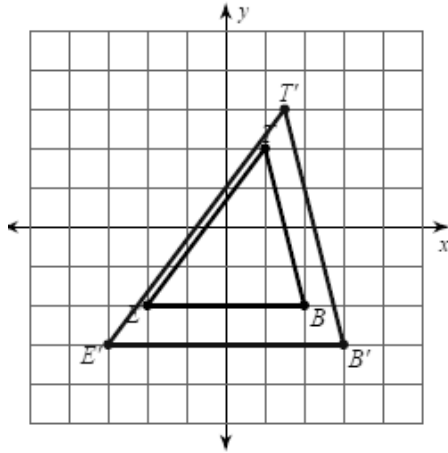
9. 90° clockwise

10. 180° counterclockwise



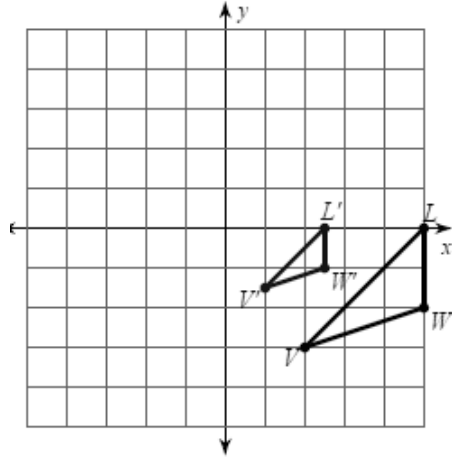
Identify the scale factor of each dilation. Assume the center is (0, 0).

11.



⊙	/	/	
⊙	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

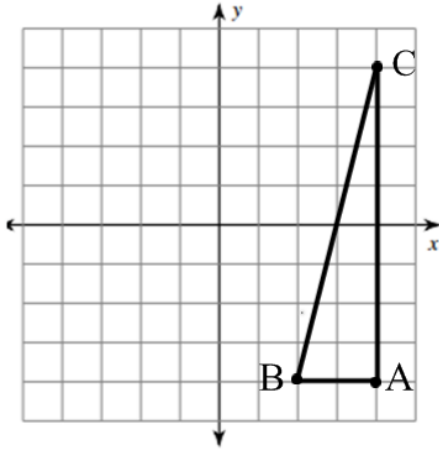
12.



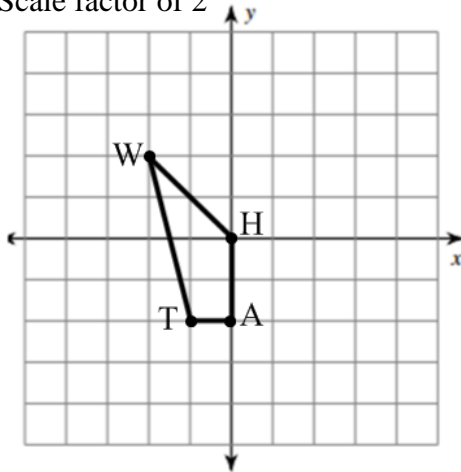
⊙	/	/	
⊙	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

Dilate the following about center (0, 0), given each scale factor. Be sure to label the images properly.

13. Scale factor of $\frac{1}{4}$



14. Scale factor of 2



For each figure: A) draw all lines of symmetry, and B) determine if it has rotational symmetry. If there is rotational symmetry, state the angle of rotation.

15.

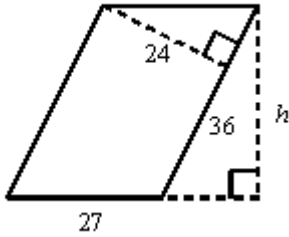


16.



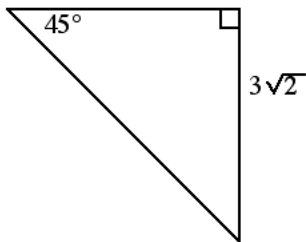
Chapter 7 – Area

1. Find the value of h in the parallelogram.



Not drawn to scale

2. Find the length of the hypotenuse.

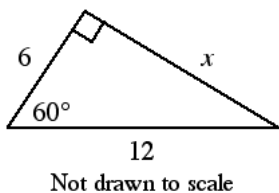


3. The area of a square garden is 50 m^2 . How long is the diagonal?

4. Find the length, d , in simplest radical form, of the diagonal of a cube with sides of s units.

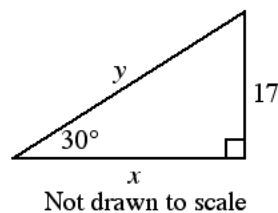
Find the value of the variable(s). If your answer is not an integer, leave it in simplest radical form.

5.



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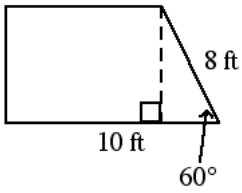
6.



Not drawn to scale

Find the area of the trapezoid. Leave your answer in simplest radical form.

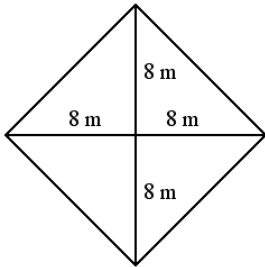
7.



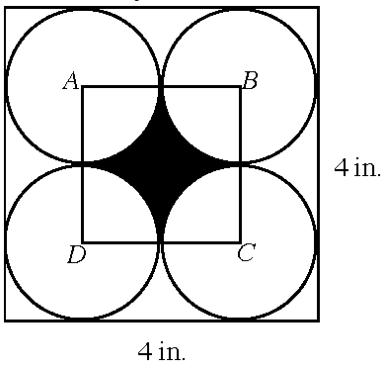
Not drawn to scale

8. A kite has diagonals 9.2 ft and 8 ft. What is the area of the kite?

9. Find the area of the rhombus.

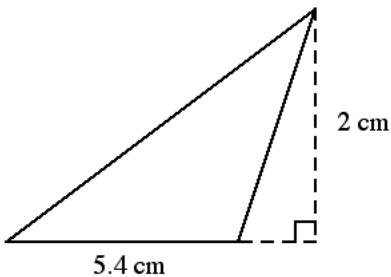


10. Find the area of the shaded portion of the figure. Each vertex of square $ABCD$ is at the center of a circle. Leave your answer in terms of π .



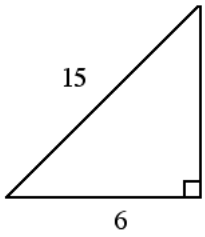
Find the area. The figure is not drawn to scale.

11.



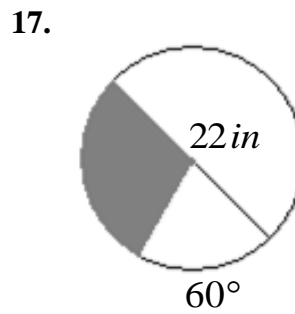
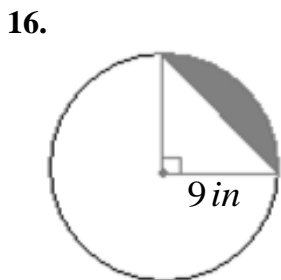
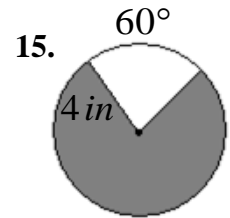
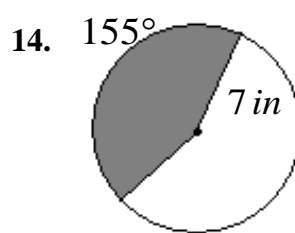
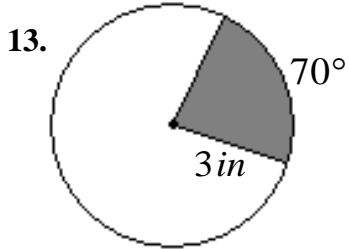
Find the length of the missing side. Leave your answer in simplest radical form.

12.

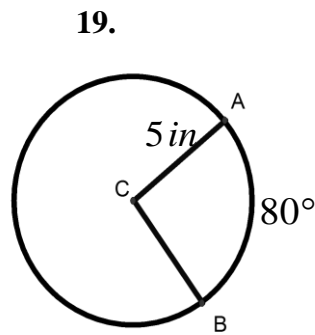
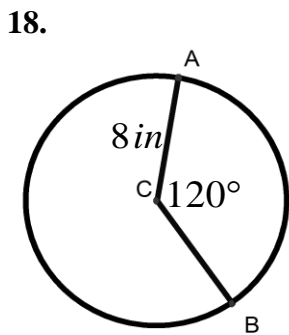


Not drawn to scale

Find the area of the shaded region in each circle below, using 3.14 for π . Round to the nearest tenth.

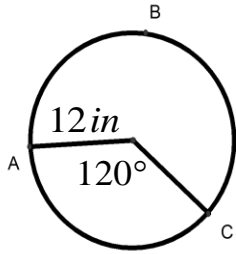


Find the length of AB in each circle using 3.14 for π . Round to the nearest tenth.



Find the length of ABC in each circle using 3.14 for π . Round to the nearest tenth.

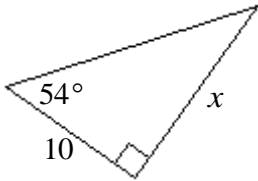
20.



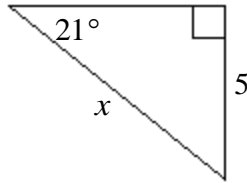
Chapter 9 – Trigonometry

Write an equation involving *sine*, *cosine*, or *tangent* that can be used to find x . Then, solve the equation. Round answers to TWO decimal places.

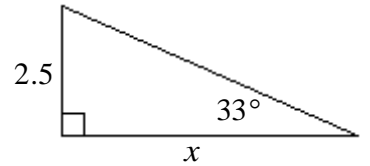
1.



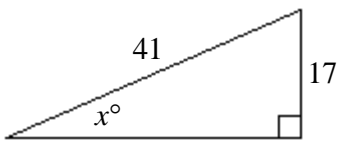
2.



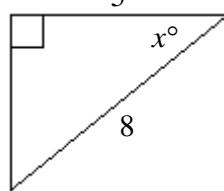
3.



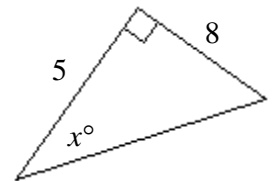
4.



5.



6.



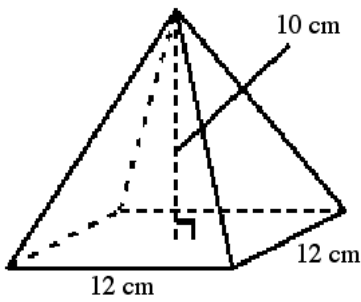
7. To approach runway 17 of the Ponca City Municipal Airport in Oklahoma, the pilot must begin a 3° descent starting from an altitude of 2714 ft. The airport altitude is 1007 ft. Create a trigonometric equation to find how many miles the airplane is from the runway, and then find that distance, to the nearest foot.

Chapter 10 – Surface Area and Volume

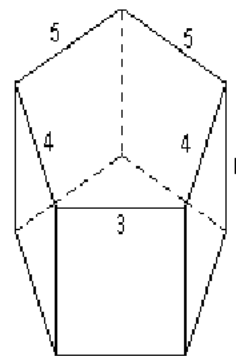
1. A room is 14 ft long and 28 ft wide. The ceiling is 8 ft high. A particular brand of paint will cover 125 ft² per gallon. How many gallons of paint are needed to paint the walls of the room?

●	●	●	●
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

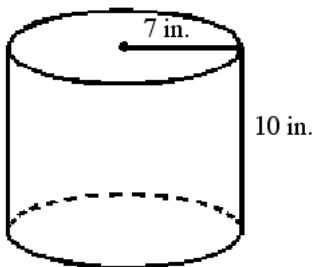
2. Find the Lateral area and Surface area of the following figures:



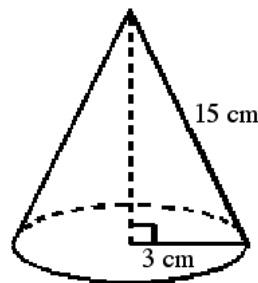
Not drawn to scale



LATERAL AREA ONLY!!!

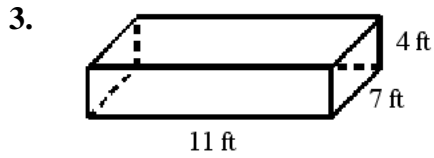


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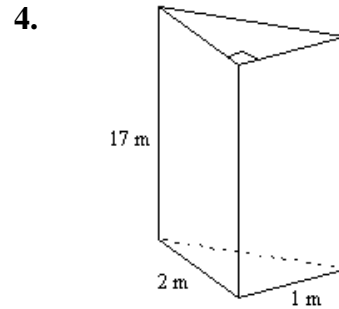


Not drawn to scale

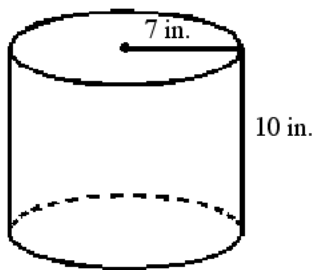
Find the volume of the given prism. Round to the nearest tenth if necessary.



Not drawn to scale

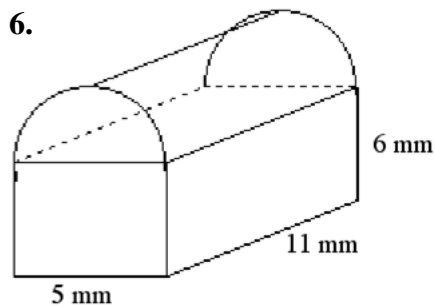


5. Find the volume of the cylinder in terms of π .

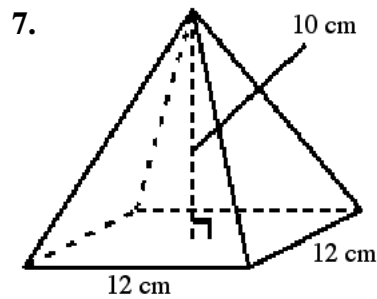


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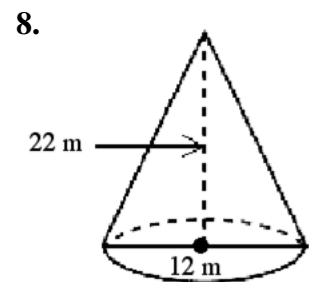
Find the volume of the following figures, to the nearest whole number.



Not drawn to scale



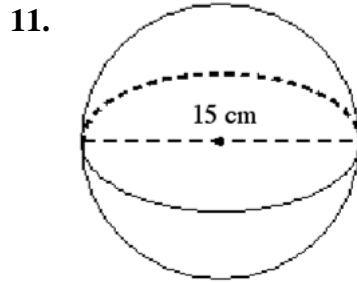
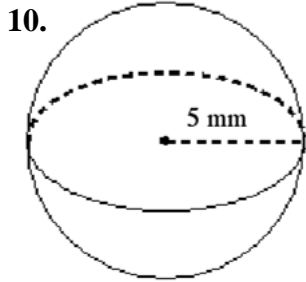
Not drawn to scale



Not drawn to scale

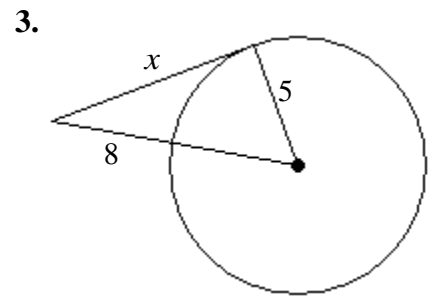
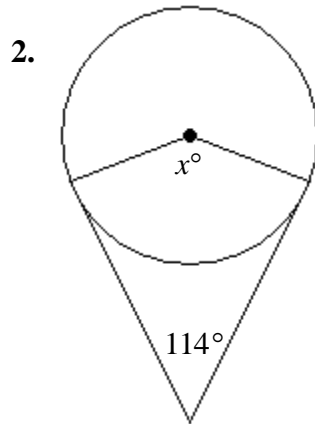
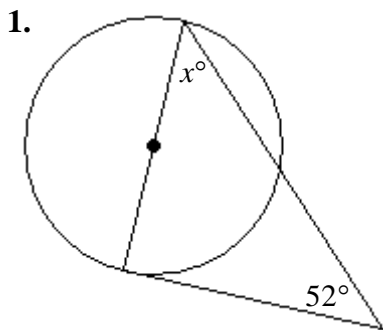
9. Find the surface area of the sphere with a diameter of 16 cm, in terms of π .

Find the volume of the following spheres. Give each answer rounded to the nearest cubic unit.

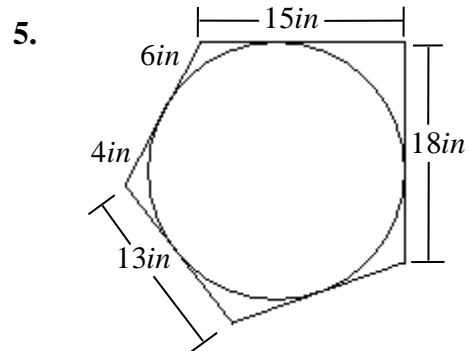
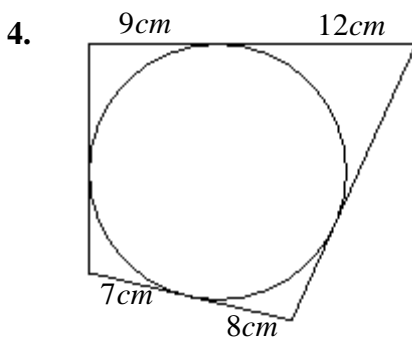


Chapter 11 – Circles

Assume that the lines that appear to be tangent are tangent. Find the value of x .

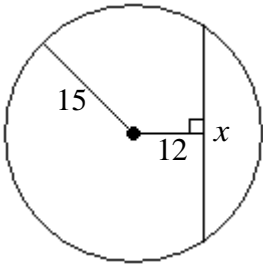


Each polygon is circumscribed about the circle. Find the perimeter of each polygon.

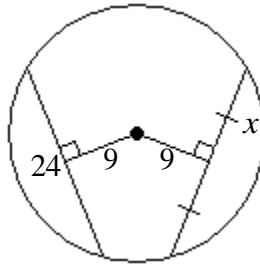


Find the value of x . If necessary, round to TWO decimal places.

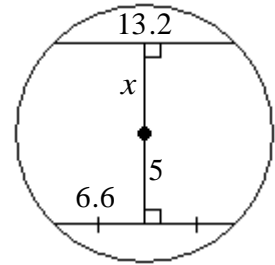
6.



7.

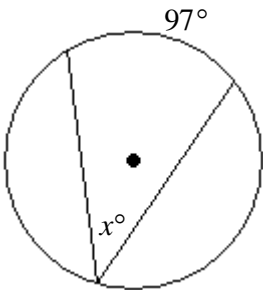


8.

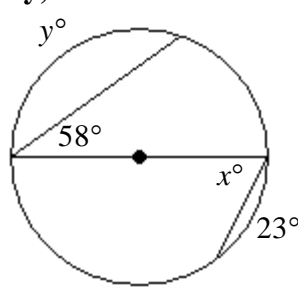


Find the value of each variable. If necessary, round to TWO decimal places.

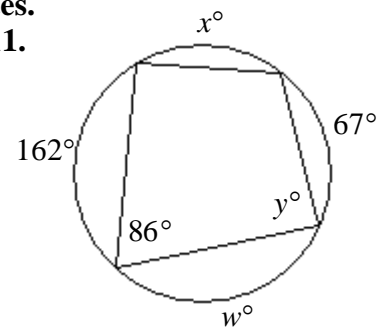
9.



10.



11.

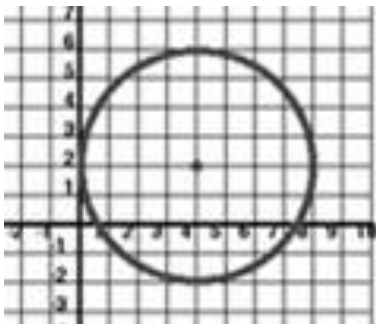


For 12-14, write the standard equation of each circle.

12. $C(2, -7); r = 7$

13. $C(-10, -5)$; passes through the point $(-5, 5)$

14.



15. Identify the center and radius of the following:

$$(x - 5)^2 + (y + 9)^2 = 72$$