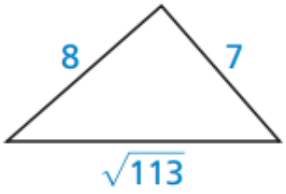
Chapter 9 review

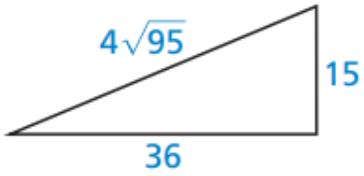
1.

Tell whether each triangle is a right triangle.

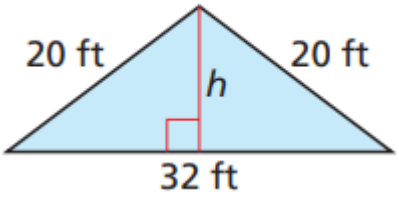
a.



b.



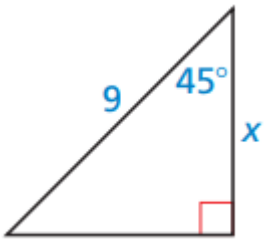
2. Find the area of the isosceles triangle



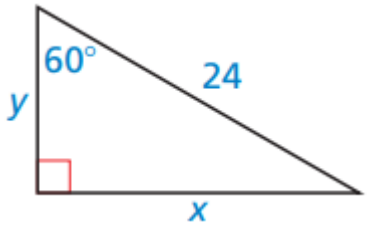
3. Verify that the segment lengths form a triangle. Is the triangle acute, right, or obtuse?
   (a) 10, 11, and 14

   (b) 12, 16, and 20

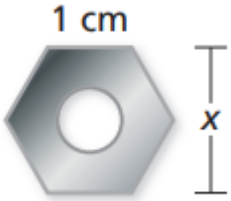
4. Find the value of x and y.
   (a)



(b)

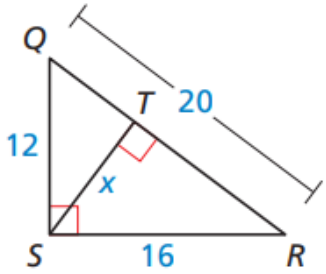


5. A nut is shaped like a regular hexagon with side lengths of 1 centimeter. Find the value of x

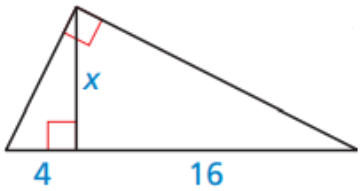


6. Find the value of x.

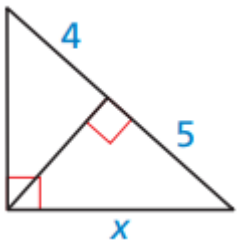
(a)



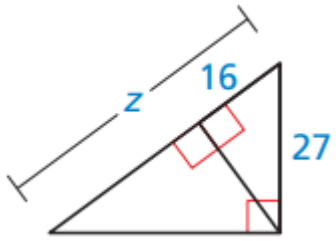
(b)



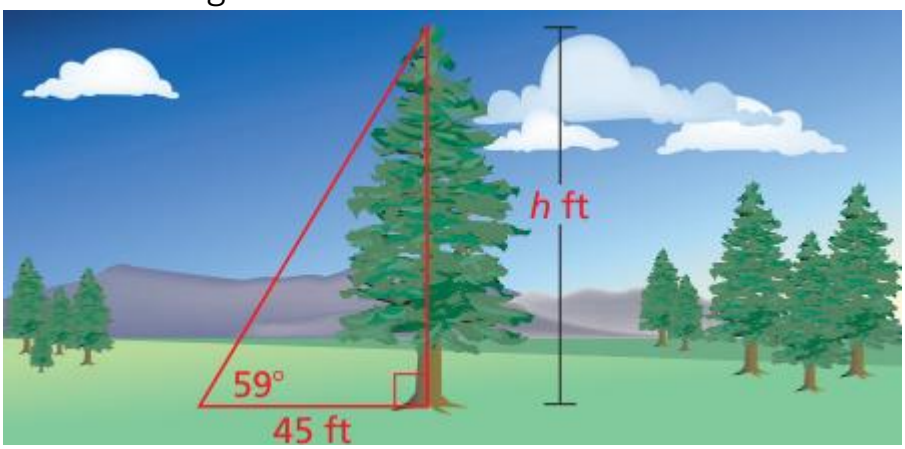
(c)



(d)



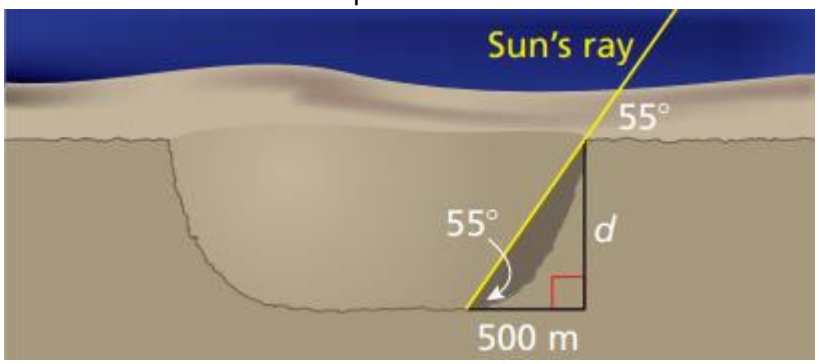
7. You are measuring the height of a spruce tree. You stand 45 feet from the base of the tree. You measure the angle of elevation from the ground to the top of the tree to be 59°. Find the height h of the tree to the nearest foot.



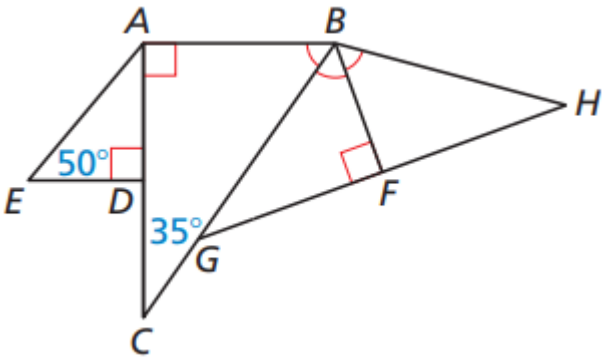
8. Use a special right triangle to fi nd the tangent of the given angle measure.

(a)45 deg (b)60 deg

9. Scientists can measure the depths of craters on the moon by looking at photos of shadows. The length of the shadow cast by the edge of a crater is 500 meters. The angle of elevation of the rays of the Sun is 55°. Estimate the depth d of the crater.

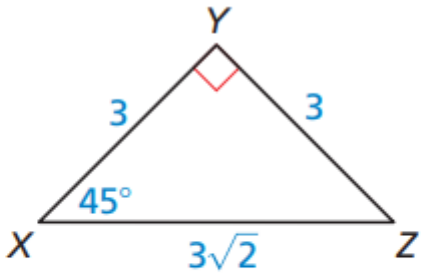


10. Find the perimeter of the figure, where $\overline{AC}=26$, $\overline{AD}=\overline{BF}$, and D is the midpoint of $\overline{AC}$.



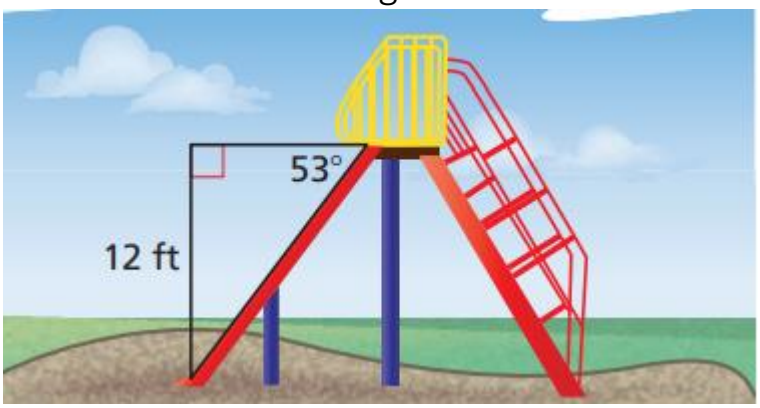
11. Write sin 56° in terms of cosine.

12. Which ratios are equal? Select all that apply.

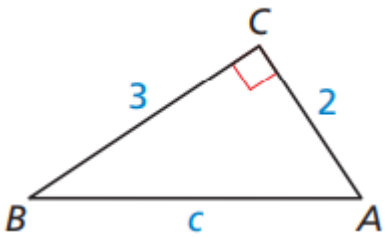


$\sin X$	$\cos X$	$\sin Z$	$\cos Z$

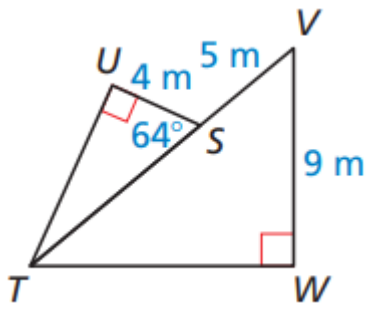
13. The top of the slide is 12 feet from the ground and has an angle of depression of 53°. What is the length of the slide?



14. Solve the right triangle. Round decimal answers to the nearest tenth.



15. Solve triangle.



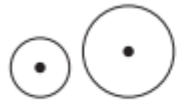
16. Simplify each expression.

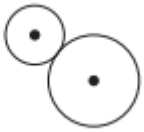
(a) $\sin^{-1}(\sin x)$

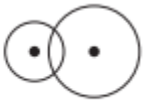
(b) $tan\left(tan^{-1}\, y\right)$

Chapter 10 review

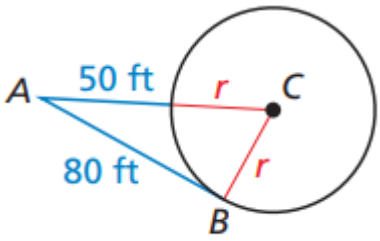
1. Tell how many common tangents the circles have and draw them. Use blue to indicate common external tangents and red to indicate common internal tangents.

a. 

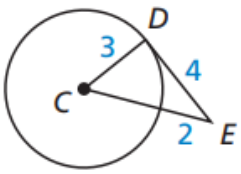
b. 

c. 

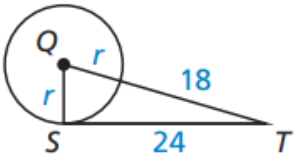
2. In the diagram, point B is a point of tangency. Find the radius r of ⊙C.



6. Is $\overline{DE}$ tangent to $\odot C$?



7. $\overline{ST}$ is tangent to $\odot Q$. Find the radius of $\odot Q$.



8. Points M and N are points of tangency. Find the value(s) of x.