

8.4

Date:

Objective:

Review:

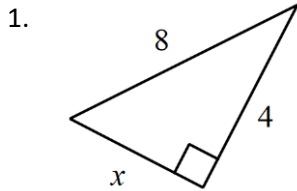
Simplify the following radicals.

1. $\frac{\sqrt{4}}{2\sqrt{64}}$

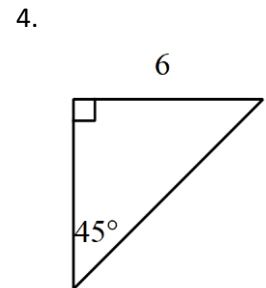
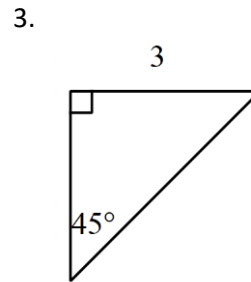
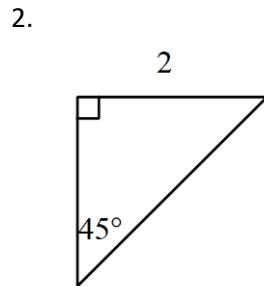
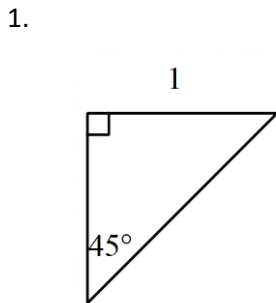
2. $\frac{\sqrt{5}}{\sqrt{16}}$

3. $\frac{2\sqrt{15}}{\sqrt{5}}$

Review: Find the missing side. Leave answers in exact form or simplest radical form. (Use square roots, not decimals.)



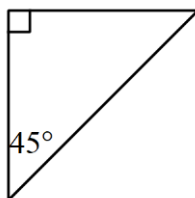
Find the missing sides of these isosceles triangles. Leave answers in simplest radical form. (Use square roots, not decimals.) Triangles are not drawn to scale.



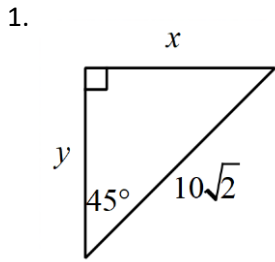
What pattern do you see?

This pattern works for every isosceles right triangle or $45^\circ - 45^\circ - 90^\circ$ triangles. So we can use this pattern to find the missing sides without needing to show work.

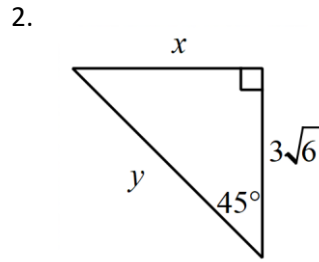
PATTERN for $45^\circ - 45^\circ - 90^\circ$ special right triangles:



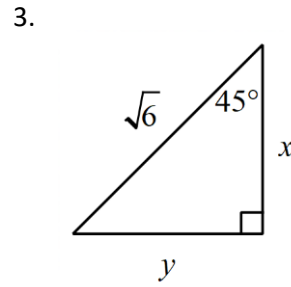
Use the pattern for $45^\circ - 45^\circ - 90^\circ$ special right triangles to find the missing sides. Leave answers in simplest radical form.



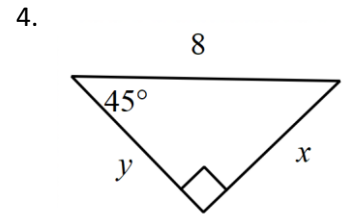
$x =$ _____
 $y =$ _____



$x =$ _____
 $y =$ _____



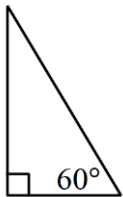
$x =$ _____
 $y =$ _____



$x =$ _____
 $y =$ _____

There is another right triangle that has a pattern. It is a $30^\circ - 60^\circ - 90^\circ$ triangle.

PATTERN for $30^\circ - 60^\circ - 90^\circ$ special right triangles:

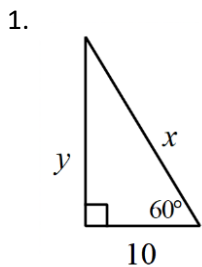


NOTICE: Long leg is across from _____

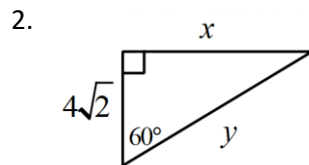
Short leg is across from _____

Legs "hold up" the 90° angle

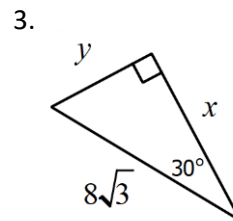
Use the pattern for $30^\circ - 60^\circ - 90^\circ$ special right triangles to find the missing sides. Leave answers in simplest radical form.



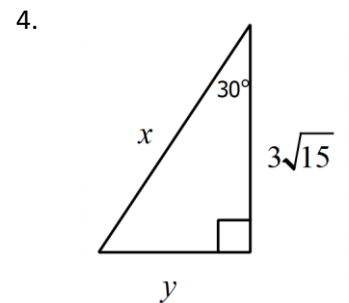
$x =$ _____
 $y =$ _____



$x =$ _____
 $y =$ _____



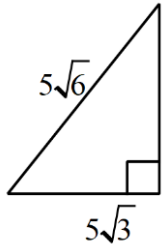
$x =$ _____
 $y =$ _____



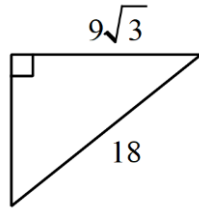
$x =$ _____
 $y =$ _____

Given the sides of the right triangle, decide which type of special right triangle it is, ($30^\circ - 60^\circ - 90^\circ$ or $45^\circ - 45^\circ - 90^\circ$). Then write the degree measures of the missing 2 angles in the correct spot. **Triangles are not drawn to scale.**

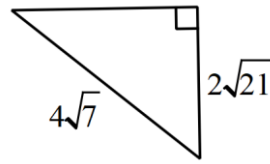
1.



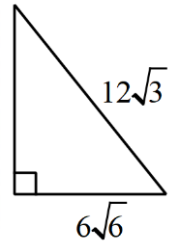
2.



3.



4.

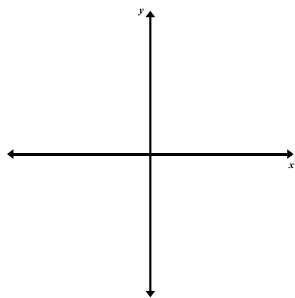


Now we are going to use special right triangle rules to find the trig function of an angle in standard position.

STEPS

1. Draw the _____
2. Draw the _____ . This makes a _____ triangle.
3. Figure out which special right triangle it is and what all the angles are
4. Pick any number for the _____
5. Use the rules for the special right triangle to find the other missing sides
6. Use _____ - _____ - _____ to find the answer, leave answer in simplest radical form

EXAMPLE: Find the values of all six trigonometric functions of angle 315°



Reference angle: _____

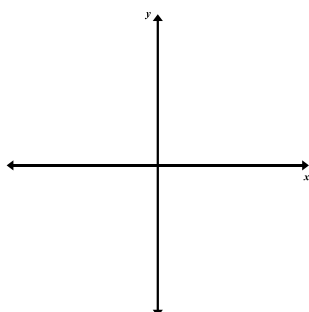
a) $\sin 315^\circ =$

b) $\cos 315^\circ =$

c) $\tan 315^\circ =$

EXAMPLE: Draw a reference triangle for the given angle. Pick a number for the hypotenuse. Decide which type of special triangle it is and use the rules to find the missing sides. Give the exact value of each trig function without using a calculator.

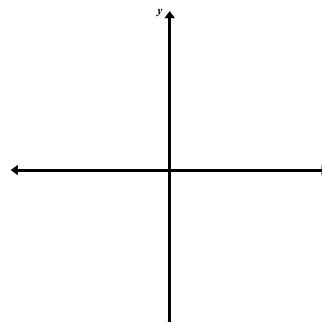
1. $\cos \frac{7\pi}{6}$



Reference angle:

$\cos \frac{7\pi}{6} =$

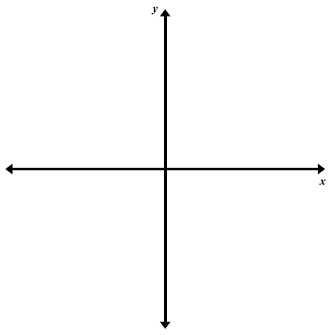
2. $\sin -225^\circ$



Reference angle:

$\sin -225^\circ =$

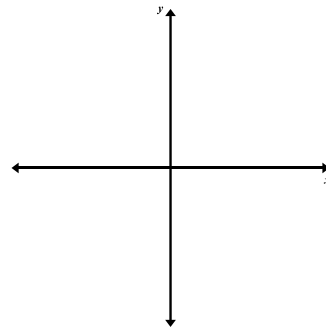
3. $\tan \frac{5\pi}{3}$



Reference angle:

$$\tan \frac{5\pi}{3} =$$

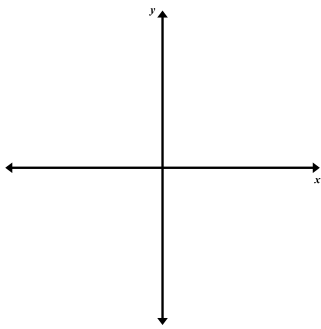
4. $\csc 60^\circ$



Reference angle:

$$\csc 60^\circ =$$

5. $\sec \frac{7\pi}{4}$



Reference angle:

$$\sec \frac{7\pi}{4} =$$