SM 3H

Date: Section:

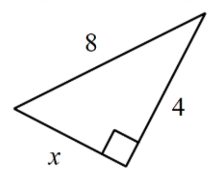
Objective:

Review: Simplify each radical.

1. $\sqrt{24}$ 2. $\frac{4}{\sqrt{3}}$ 3. $\frac{5\sqrt{2}}{2\sqrt{3}}$

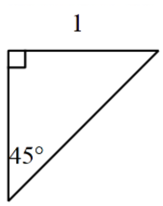
Find the missing side. Leave answers in simplest radical form. (Use square roots, not decimals.)

1.



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.

1.



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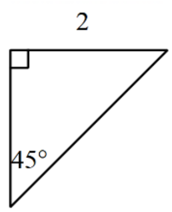

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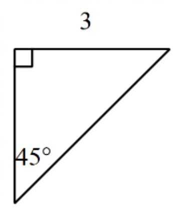

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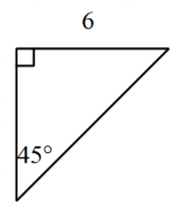
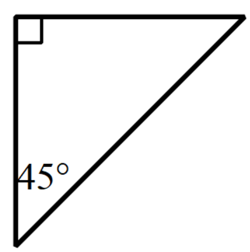


What pattern do you see?

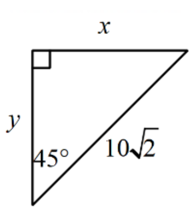
This pattern works for every isosceles right triangle or $45° - 45° - 90°$ triangles. So, we can use this pattern to find the missing sides without needing to show work.

PATTERN for $45° - 45° - 90°$ special right triangles:



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

1.



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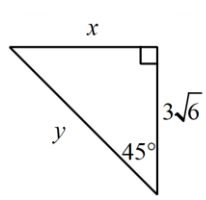

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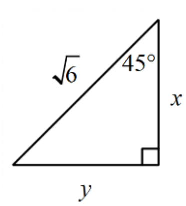

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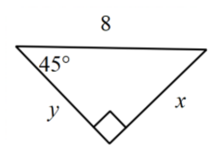
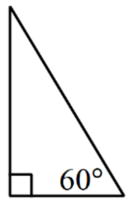


$x =$ __________ $x =$ __________ $x =$ __________ $x =$ __________

$y =$ __________ $y =$ __________ $y =$ __________ $y =$ __________

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

PATTERN for $30° - 60° - 90°$ special right triangles:

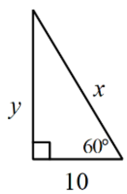


NOTICE: Long side is across from ___________________________

Short side is across from ___________________________

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

1.



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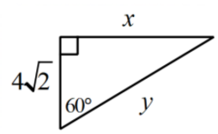

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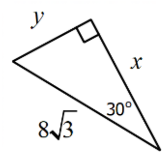

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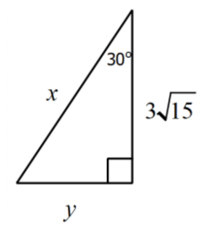
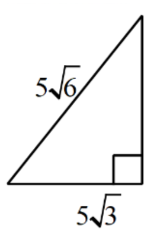


$x =$ __________ $x =$ ___________ $x =$ __________ $x =$ ____________

$y =$ __________ $y =$ ___________ $y =$ __________ $y =$ ____________

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

1.



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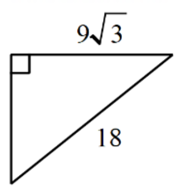

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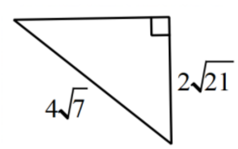

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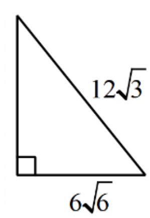
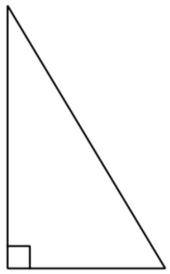
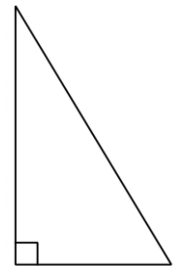


Triangles that are not special right triangles





Hypotenuse: Opposite side: Adjacent side:

Ratios of the sides are the same for every angle. Example: No matter how long the sides are of a 53.1° angle, when you divide the 2 sides you will always get the same decimal.

There are 6 trigonometric functions.

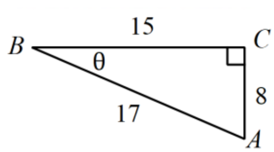
Sine = ____________ = ________ = ________ Cosecant = ___________ = ________ = ________

Cosine = ____________ = ________ = ________ Secant = ___________ = ________ = ________

Tangent = ____________ = ________ = ________ Cotangent = __________ = ________ = ________

Example: Find all 6 trigonometric ratios.

1.

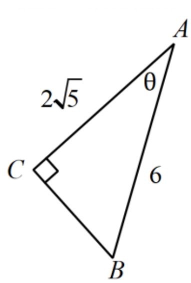


$\sin\theta =$ ________ $\csc\theta =$ ________

$\cos\theta =$ ________ $\sec\theta =$ ________

$\tan\theta =$ ________ $\cot\theta =$ ________

2.



$\sin\theta =$ ________ $\csc\theta =$ ________

$\cos\theta =$ ________ $\sec\theta =$ ________

$\tan\theta =$ ________ $\cot\theta =$ ________

Example: Given one trig function, find the other 5.

1. $\tan\theta = \frac{\sqrt{3}}{5}$

$\sin\theta =$ ________ $\csc\theta =$ ________

$\cos\theta =$ ________ $\sec\theta =$ ________

$\tan\theta =$ ________ $\cot\theta =$ ________

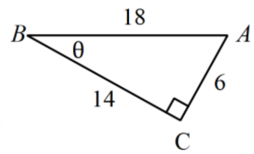
Example: Find the value of each. Round you answers to the nearest ten-thousandth.

1. $\cos 65° =$

2. $\csc 28° =$

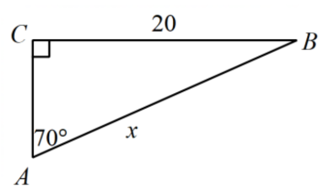
Example: Use a trigonometric ratio to find the indicated angle. ******INVERSE of trig function is used ONLY to find an angle!!!!!!!!!!!

1.



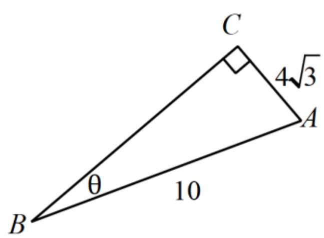
Example: Use a trigonometric ratio to find the indicated side.

1.



Example: Use right triangle trigonometry to find all the missing parts of the right triangle.

1.



$m\angle A =$ ________ $a =$ ________

$m\angle B =$ ________ $b =$ ________

$m\angle C =$ ________ $c =$ ________

Example: Find the exact answer without a calculator.

1. $\sin\frac{\pi}{4}$

Example: Find the angle without a calculator.

1. $\cos^{-1}\left(\frac{1}{2}\right)$