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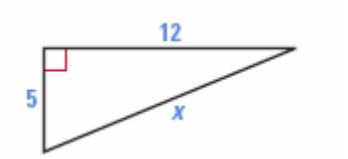
Chapter 7
Right Triangle Review

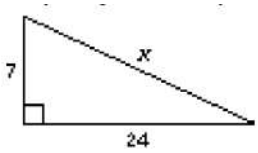
Pythagorean Theorem	$a^2 + b^2 = c^2$

Using the Pythagorean Theorem, find the length of the missing side of the triangle. ***Leave answers in simplified radical form. NO DECIMALS!***

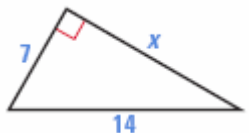
A.



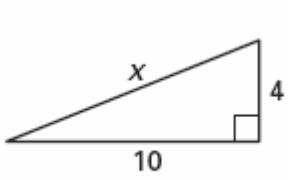
B.



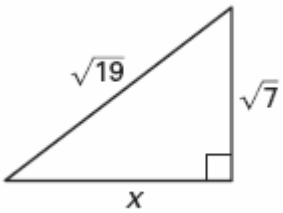
C.



D.



E.



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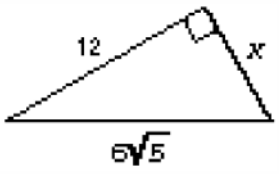
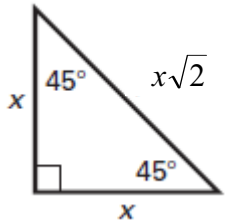


45° - 45° - 90° Triangle Theorem

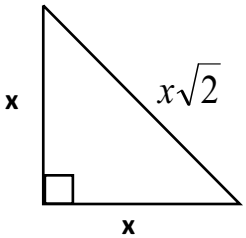
$$hypotenuse = leg \cdot \sqrt{2}$$

$$leg = \frac{hypotenuse}{\sqrt{2}}$$



REMEMBER: You cannot have a radical in the denominator. Rationalize it by multiplying numerator and denominator by the radical.

Fill in the table with the missing side lengths of the 45-45-90 triangle. Leave all answers in simplified radical form.



Leg (x)	Leg (x)	Hypotenuse ($x\sqrt{2}$)
5		
		$3\sqrt{2}$
		$6\sqrt{2}$
		10

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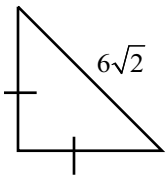
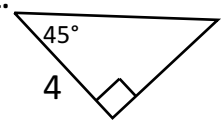
Recall Special Right Triangles. Find all missing side lengths

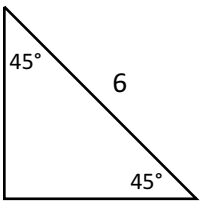
1.



2.



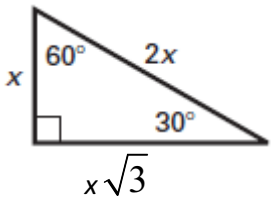
3.



30° - 60° - 90° Rules:

$hypotenuse = short\ leg \cdot 2$

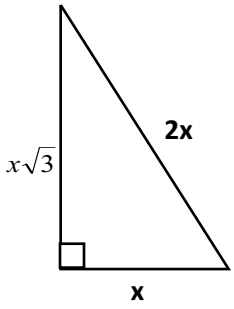
$long\ leg = short\ leg \cdot \sqrt{3}$



$short\ leg = \frac{hypotenuse}{2}$ or $short\ leg = \frac{longleg}{\sqrt{3}}$

REMEMBER: You cannot have a radical in the denominator. Rationalize it by multiplying numerator and denominator by the radical.

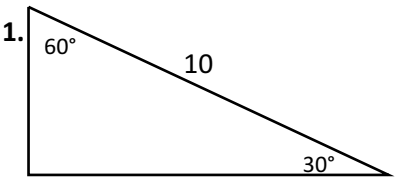
Fill in the table with the missing side lengths of the 30-60-90 triangle. Leave all answers in simplified radical form.



Short Leg (x)	Long Leg ($x\sqrt{3}$)	Hypotenuse (2x)
6		
		20
	$4\sqrt{3}$	

Find all the missing side lengths.

1.



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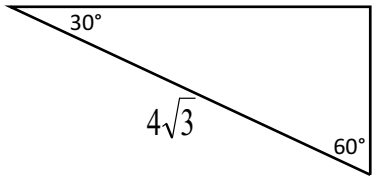

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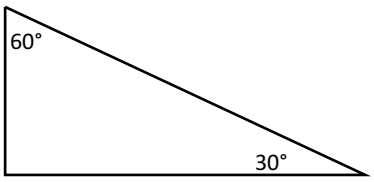

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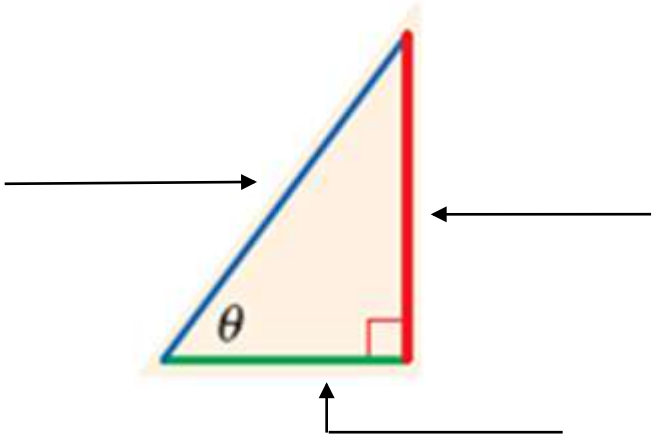
TRIGONOMETRY

Recall from Geometry:

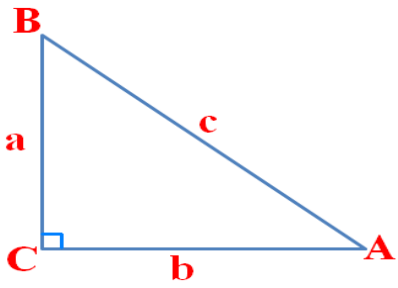
- The sum of the angles in a triangle must be $180°$

Trigonometric Ratio: SOH-CAH-TOA		
Sine	$\sin\theta = \frac{opposite}{hypotenuse}$	
Cosine	$\cos\theta = \frac{adjacent}{hypotenuse}$	
Tangent	$\tan\theta = \frac{opposite}{adjacent}$	

Ex. 1: Given the triangle shown, use the variables to find:

a. sin A = b. sin B = c. tan A =

d. cos A = e. cos B = f. tan B =

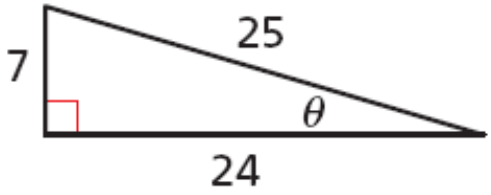


Ex. 2: Given the triangle shown, write each ratio as a fraction:

a. $\sin\theta =$

b. $\cos\theta =$

c. $\tan\theta =$



Using Your Calculator: On your graphing calculator, you must set the MODE to "degrees" because the angles of a triangle are measured in degrees!

Ex. 3: Use your calculator to find the following trig ratios (round to four decimal places).

A) $\sin 90° =$ B) $\cos 15° =$ C) $\tan 73° =$

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Ex. 4: Solve the following for the variable (round to the nearest tenth).

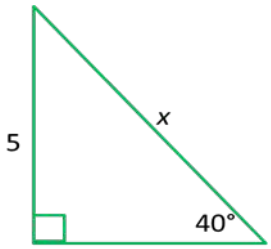
A) $\sin 23^\circ = \frac{x}{15}$ B) $\cos 74^\circ = \frac{w}{5}$ C) $\tan 60^\circ = \frac{3}{y}$

D) $\sin 80^\circ = \frac{18}{x}$ E) $\cos 12^\circ = \frac{10}{y}$ F) $\tan 68^\circ = \frac{z}{43}$

Trigonometric Ratio: SOH-CAH-TOA

Solve for the variable using trigonometric ratios. Round to the nearest tenth.

1.



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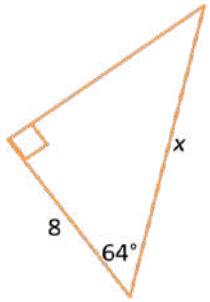
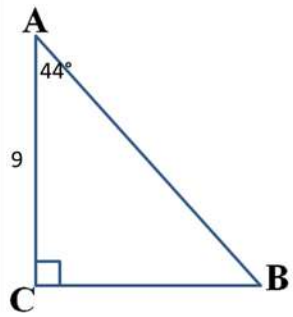


Solve the triangles for all missing sides and angles using the trig ratios. Round to the nearest tenth.

3.



4.