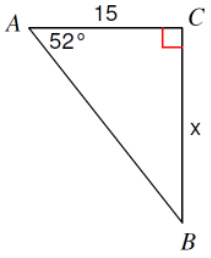
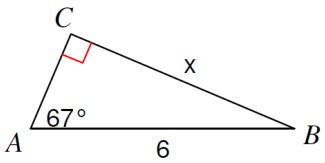
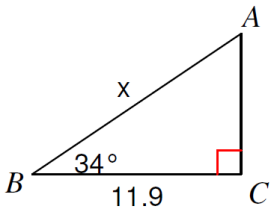
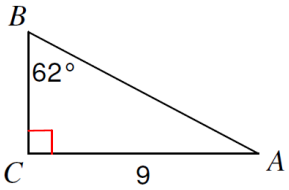
Triangle Trigonometry – Inverse Trigonometric Ratios in Rt Triangles

Before Getting Started – Let's Review: Trigonometric Ratios

1.) Find side x.	2.) Find side x.	3 .) Find side x.	4.) Solve triangle ABC.
			

Inverse Trigonometric Ratios: Use ONLY when FINDING AN ANGLE MEASUREMENT!!!

Trigonometric Ratios	Inverse Trigonometric Ratios	Calculator Keys
$\sin\theta = \frac{opposite}{hypotenuse}$		2nd sin (_____)
$\cos\theta = \frac{adjacent}{hypotenuse}$		2nd cos (_____)
$\tan\theta = \frac{opposite}{adjacent}$		2nd tan (_____)

Example 1: Solve each equation by find the value of angle θ. Round to tenth place.

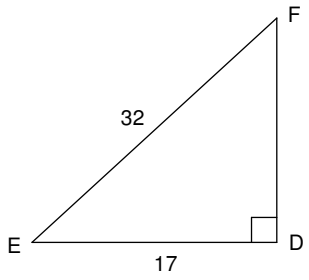
a.) $\sin\theta = \frac{\sqrt{3}}{2}$	b.) $\cos\theta = 0.7498$	c.) $\tan\theta = 2$

Example 2: Evaluate each expression using the inverse trig ratios' definitions.

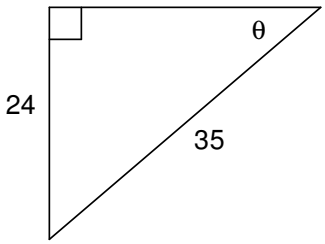
a.) $\tan\left(\tan^{-1}\frac{6}{4}\right)$	b.) cos (arcsin 1)	c.) $\sin(\cos^{-1}\frac{\sqrt{3}}{2})$	d.) tan (arccos 0)

<u>Example 3</u>: Find the indicated angle. Round to nearest tenth.

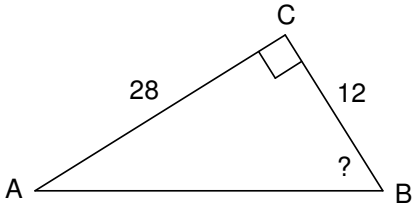
a.) Find angle E.



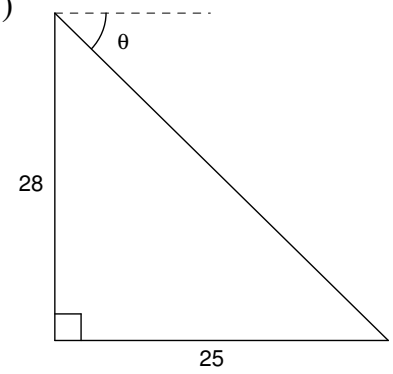
b.) Find angle θ.



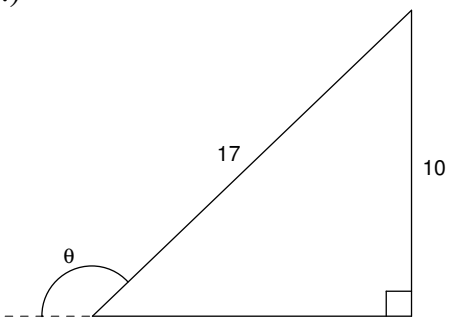
c.) Find the missing angle.



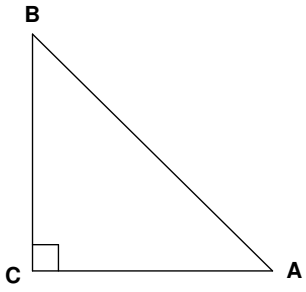
d.)



e.)



f.) Solve triangle ABC: a = 12 , b = 18



g.) Solve triangle ABC: a = 23, c = 45