

## MCR3U – Unit 4 (Trigonometry) Quiz

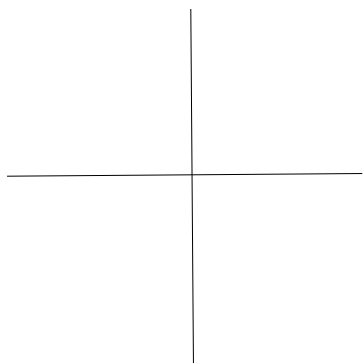
Show all related work.

Name: \_\_\_\_\_

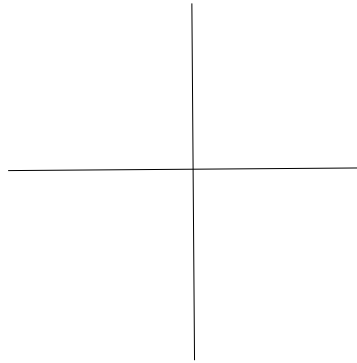
8 K   6 T   4 C   9 A   27 Total

1. Please give the **exact** trigonometric ratios that correspond to the following angles:

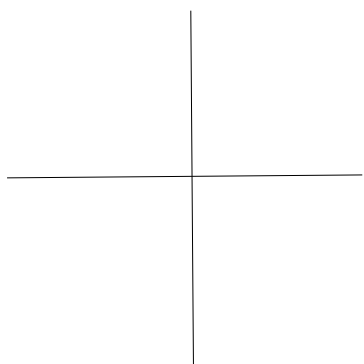
a)  $\cos 300^\circ =$



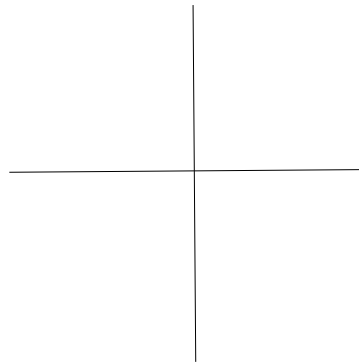
b)  $\tan 135^\circ =$



c)  $\tan 210^\circ =$



d)  $\sin 300^\circ =$



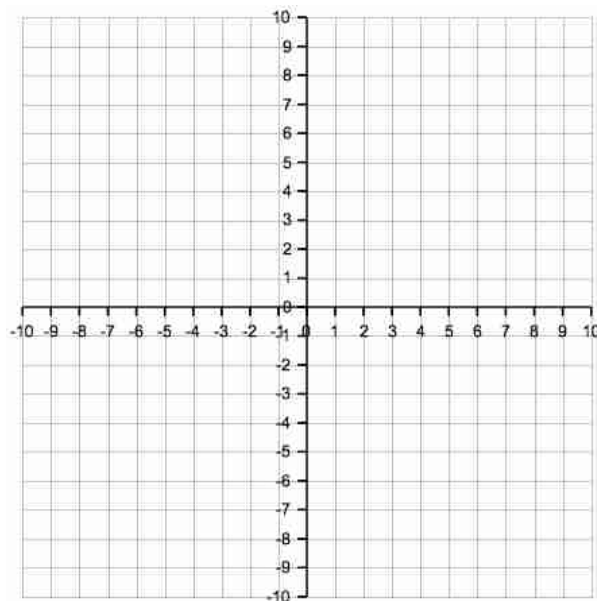
2. Solve triangle ABC if:  $a = 8$  km,  $b = 6$  km,  $c = 12$  km.

4 K

4 C

3 A

3. What are the exact trigonometric ratios for the angle ( $\theta$ ) represented by a terminal arm that goes through ( 8 , -7 )? [Please draw the terminal arm on the grid provided, and label the side lengths. Show any other work in the space below.]



4 K

$$\sin \theta = \boxed{\phantom{000}}$$

$$\cos \theta = \boxed{\phantom{000}}$$

$$\csc \theta = \boxed{\phantom{000}}$$

$$\sec \theta = \boxed{\phantom{000}}$$

$$\tan \theta = \boxed{\phantom{000}}$$

$$\cot \theta = \boxed{\phantom{000}}$$

4. Prove each of the following identities.

a)  $\cot \theta \tan \theta \sec \theta \cos \theta = 1$

b)  $\sin^2 x = \cos^2 x (\sec^2 x - 1)$

6 T

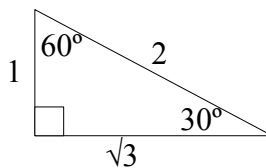
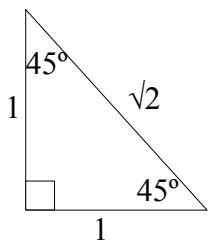
6. Solve **all** triangles that satisfy the given information. Be sure to show **how many** triangles can be formed.

$a = 11$  m,  $c = 14$  m, and angle  $A = 45^\circ$

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**6 A**

## Reference Material



$$\tan \theta = \frac{\sin \theta}{\cos \theta}$$

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\csc q = \frac{1}{\sin q}$$

$$\sec q = \frac{1}{\cos q}$$

$$\cot q = \frac{1}{\tan q}$$

$$c^2 = a^2 + b^2 - 2ab(\cos C)$$

$$\cos C = \frac{a^2 + b^2 - c^2}{2ab}$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$