Geometry Honors
Unit 8: Similarity within Triangles
8.3a Trig Ratios (sin and cos)

Mathematician: _____
Period:_____

LEVEL: EMERGING

Directions: For each triangle, state which side is the hypotenuse, the adjacent, and the opposite side.

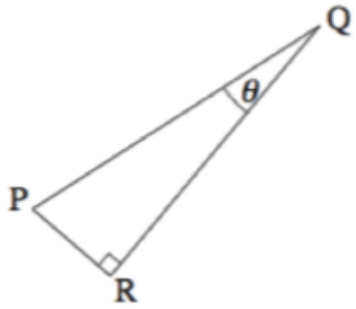
1)

Hypotenuse: _____

Adjacent: _____

Opposite: _____

2)



Hypotenuse: _____

Adjacent: _____

Opposite: _____

3)

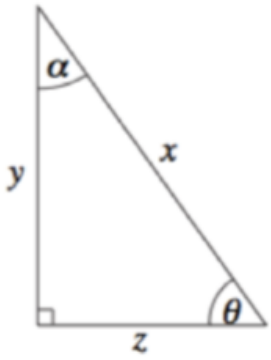
Hypotenuse: _____

Adjacent: _____

Opposite: _____

Directions: For the given triangle, write down the expressions for each listed trig function.

4)



a) $\sin\theta =$

b) $\cos\theta =$

c) $\tan\theta =$

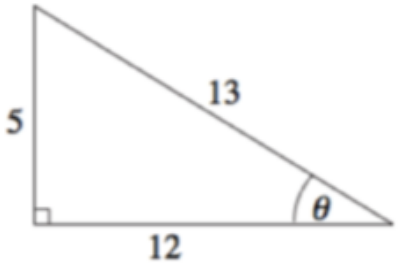
d) $\sin\alpha =$

e) $\cos\alpha =$

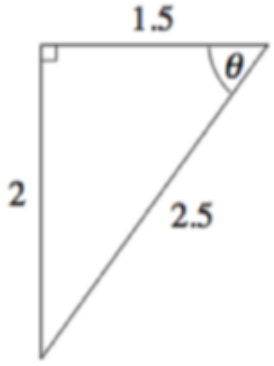
f) $\tan\alpha =$

LEVEL: PROFICIENT

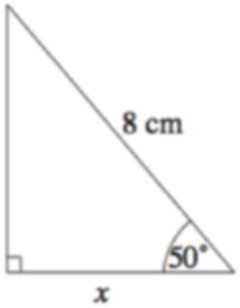
5) Write all three trigonometric ratios in simplest terms.



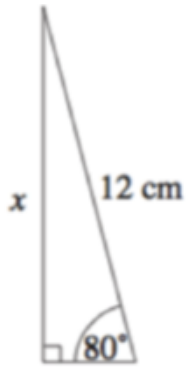
6) Write all three trigonometric ratios in simplest terms.



7) Find a trigonometric ratio that involves *x*.



8) Find a trigonometric ratio that involves x.



9) If the $\sin\theta$ is $\frac{3}{5}$, what's the $\tan\theta$?

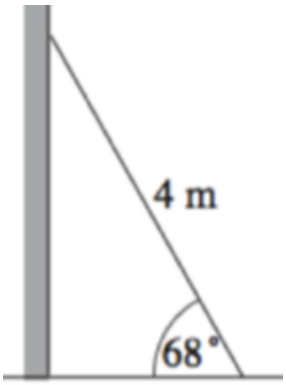
$\tan\theta =$

10) A triangle has 2 angles, θ and α. If the $\cos\theta = \frac{7}{9}$, what's the $\cos\alpha$?

$\cos\alpha =$

LEVEL: MASTERY

11) A ladder leans against a wall as shown in the diagram.



(a) Find a trigonometric ratio that involves the height the ladder meets the wall.

(b) Find a trigonometric ratio that involves how far the base of the ladder is from the wall.

12) A kite is flies at a height of 15 meters. On a windy day, Emily lets all the string out and makes an angle of 32° with the ground.

(a) Draw the picture.

(b) Find a trigonometric ratio that involves the length of the string.

(c) Find a trigonometric ratio that involves the ground distance the kite is away from Emily.