

Precalculus  
Intro to Trig HW

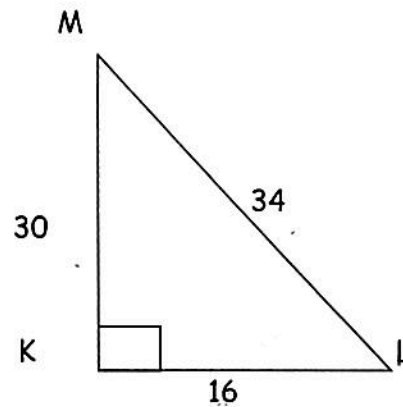
Name Key  
Date \_\_\_\_\_ Period \_\_\_\_\_

Find the indicated trigonometric ratio as a fraction and as a decimal rounded to the nearest tenths.

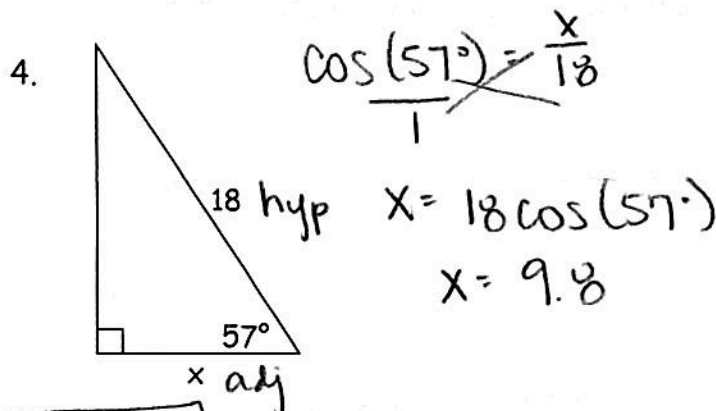
1.  $\sin M = \frac{16}{34}$  or  $\frac{8}{17} \approx 0.5$

2.  $\tan L = \frac{30}{16}$  or  $\frac{15}{8} \approx 1.9$

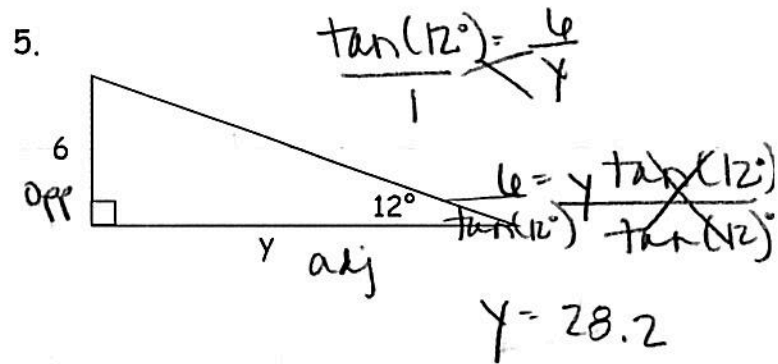
3.  $\cos L = \frac{16}{34}$  or  $\frac{8}{17} \approx 0.5$



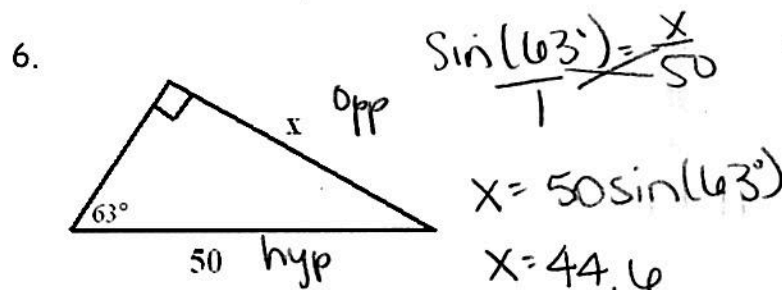
Find the value of  $x$  and  $y$ . Round the lengths of segments to the nearest tenth. (one decimal place.)



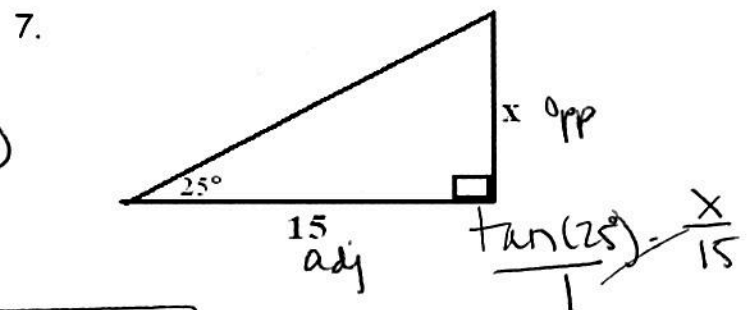
$x = 9.8$



$y = 28.2$

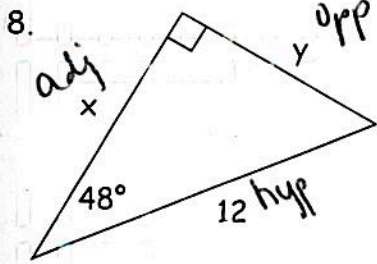


$x = 44.6$



$x = 7$

$x = 15 \tan(25^\circ)$   
 $= 6.99 \approx 7$



$$\cos(48^\circ) = \frac{x}{12}$$

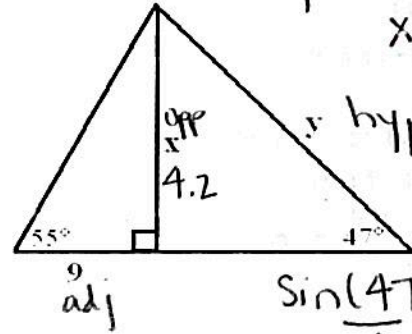
$$x = 12 \cos(48^\circ) = 8.02$$

$$\sin(48^\circ) = \frac{y}{12}$$

$$y = 12 \sin(48^\circ) = 8.9$$

$$x = 8, y = 8.9$$

9.



$$\tan(25^\circ) = \frac{x}{9}$$

$$x = 9 \tan(25^\circ) = 4.2$$

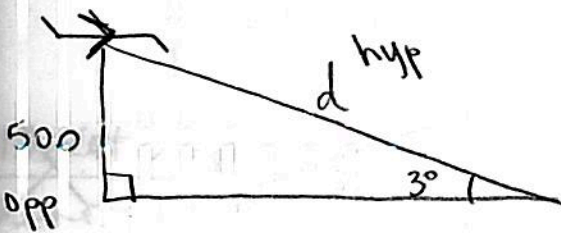
$$\sin(47^\circ) = \frac{4.2}{y}$$

$$4.2 = y \sin(47^\circ)$$

$$y = 5.7$$

$$x = 4.2, y = 5.7$$

10. You are preparing to land an airplane. You are on a straight-line approach path that forms a  $3^\circ$  angle with the runway. What is the distance  $d$  along this approach path to your touchdown point when you are 500 feet above the ground? Round your answer to the nearest foot.

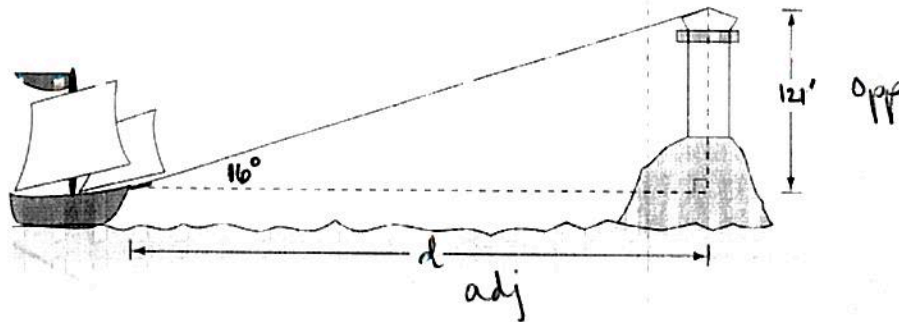


$$\sin(3^\circ) = \frac{500}{d}$$

$$500 = d \sin(3^\circ)$$

$$d \approx 9554 \text{ ft.}$$

11. The angle of elevation from a sailboat to the top of a 121-ft lighthouse on the shore measures  $16^\circ$ . To the nearest foot, how far is the sailboat from shore?



$$\tan(16^\circ) = \frac{121}{d}$$

$$121 = d \tan(16^\circ)$$

$$d \approx 422 \text{ ft.}$$