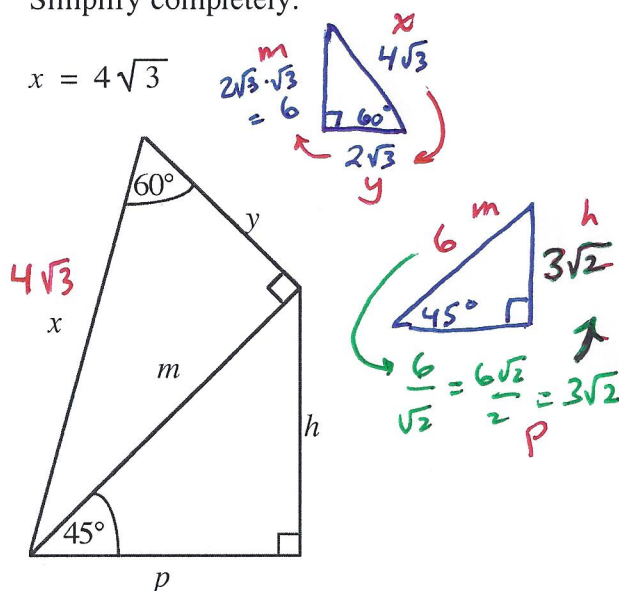


**Note:** The problems/exercises presented here are a good representation of the types of problems that will appear on the final exam. However, it is possible that other exercises not included here might also appear on the Final Exam. These exercises may be similar to—or the same as—those found on chapter tests.

1. Find the values of  $h$ ,  $m$ ,  $p$ ,  $x$ , and  $y$ , which represent the lengths of the sides of these triangles. Simplify completely.

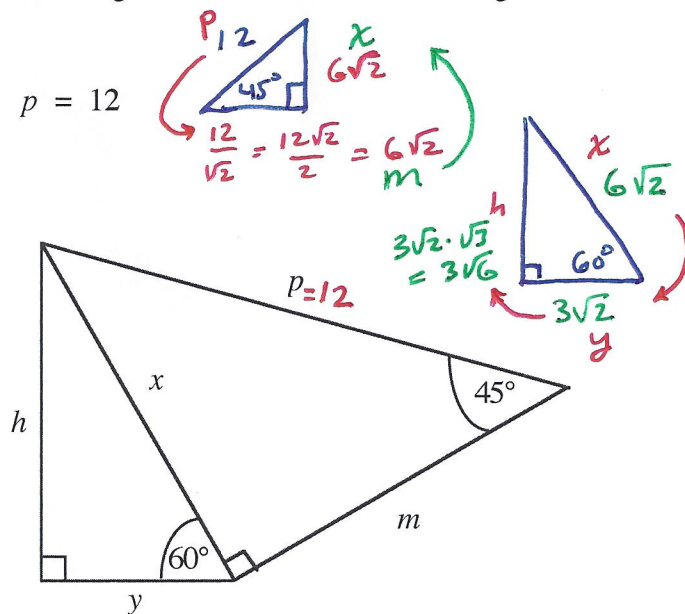
a)  $x = 4\sqrt{3}$



$$h = 3\sqrt{2} \quad m = 6$$

$$p = 3\sqrt{2} \quad y = 2\sqrt{3}$$

b)  $p = 12$



$$h = 3\sqrt{6} \quad m = 6\sqrt{2}$$

$$x = 6\sqrt{2} \quad y = 3\sqrt{2}$$

2. Based on the given information, in which quadrant does  $\theta$  terminate. (You may use the  $x$ - $y$ -axes at right to assist you.)

a)  $\tan \theta < 0$  and  $\sec \theta > 0$   
II, IV

Q IV

b)  $\csc \theta > 0$  and  $\cos \theta < 0$   
I, II

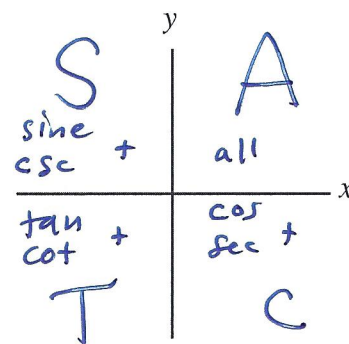
Q II

c)  $\cot \theta > 0$  and  $\sin \theta > 0$   
I, III

Q I

d)  $\csc \theta < 0$  and  $\tan \theta < 0$   
III, IV

Q IV



- 
- Hand-drawn diagram of a circle on a Cartesian coordinate system. The circle is centered at the origin  $(0,0)$  and passes through the points  $(-4, 2)$  and  $(0, -5)$ . The radius is labeled  $r$  and is shown as a line segment from the origin to the point  $(-4, 2)$ . The radius is also labeled  $r = 5$  with a red arrow pointing to the radius. The point  $(-4, 2)$  is circled in blue. The point  $(0, -5)$  is marked with a blue dot. The x and y axes are labeled. A red line segment connects the origin to the point  $(-4, 2)$ . A red arrow points from the text  $r = 5$  to the radius line segment. A blue circle is drawn around the point  $(-4, 2)$ . A blue dot is at the origin  $(0,0)$ . A blue dot is at  $(0, -5)$ . A blue line segment connects the origin to the point  $(-4, 2)$ . A red line segment connects the origin to the point  $(-4, 2)$ . A red arrow points from the text  $r = 5$  to the radius line segment. A red box contains the text  $\sqrt{5}$ .

$$\csc \theta = \frac{5}{-5} = \boxed{-1}$$

$$\csc \theta = \frac{\sqrt{5}}{1} = \boxed{\sqrt{5}}$$

$$r = 2\sqrt{5}$$

(positive only)

4. Graph **TWO** cycles of  $f(x) = 3\cos\left(\frac{5}{8}x\right)$  Mark each important  $x$ -axis value.

