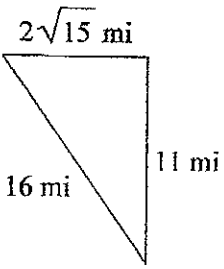


Assessment Chapter 7

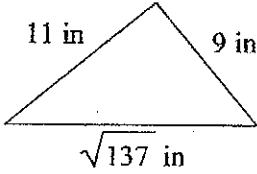
Name _____

Date _____ Period _____

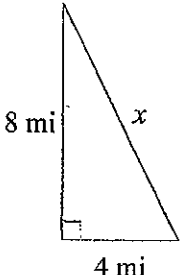
State if each triangle is acute, obtuse, or right.

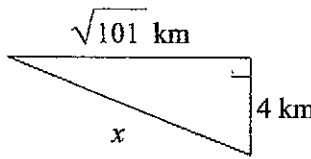
1)  $11^2 + (2\sqrt{15})^2 \stackrel{?}{=} 16^2$
 $121 + 4 \cdot 15 = 256$
 $121 + 60 = 181 \neq 256$
 $c^2 >$
Obtuse

State if each triangle is a right triangle.

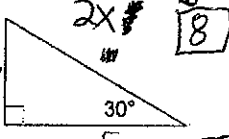
2)  $11^2 + 9^2 \stackrel{?}{=} (\sqrt{137})^2$
 $129 + 81 = 210 \neq 137$
 $c^2 <$
Acute

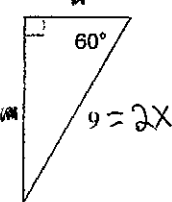
Find the missing side of each triangle. Leave your answers in simplest radical form.

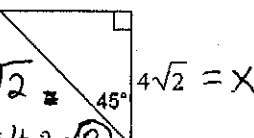
3)  $8^2 + 4^2 = x^2$
 $64 + 16 = x^2$
 $70 = x^2$
 $\sqrt{70} = x$
 or
 $x \approx 8.4$

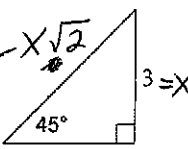
4)  $(\sqrt{101})^2 + (4)^2 = x^2$
 $101 + 16 = x^2$
 $117 = x^2$
 $\sqrt{117} = x$
 or
 $x = 10.8$

Find the missing side lengths. Leave your answers as radicals in simplest form.

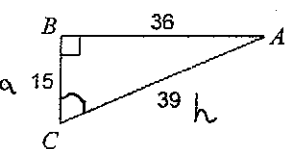
5)  $4\sqrt{3} = x\sqrt{3}$
 $\Rightarrow x = 4$

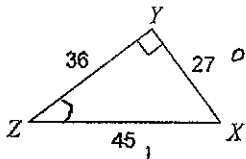
6)  $9 = 2x$
 $x = \frac{9}{2}$
 solve for x
 $\frac{2x}{2} = \frac{9}{2}$
 $x = \frac{9}{2}$

7)  $4\sqrt{2} = x$
 $(4\sqrt{2})\sqrt{2} = 4 \cdot 2 = 8$

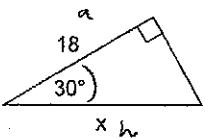
8)  $3 = x$
 $x = 3$

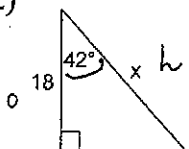
Find the value of each trigonometric ratio.

9) $\cos C$
 $\cos C = \frac{15}{39} = \frac{5}{13}$

10) $\sin Z$
 $\sin Z = \frac{27}{45} = \frac{3}{5}$

Find the missing side. Round to the nearest tenth.

11)  $\cos 30 = \frac{18}{x}$
 $x \cdot \cos 30 = 18$
 $x = \frac{18}{\cos 30}$
 $x \approx 20.8$

12)  $\cos 42 = \frac{18}{x}$
 $x \cdot \cos 42 = 18$
 $x = \frac{18}{\cos 42}$
 $x = 24.2$

Find the length of the side labeled x. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.

13)

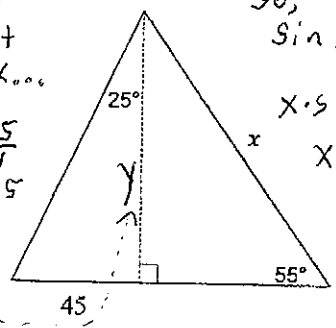
Need to get y before x...

$$\tan 25 = \frac{45}{y}$$

$$y \tan 25 = 45$$

$$y = \frac{45}{\tan 25}$$

$$y = 96.5$$



So,

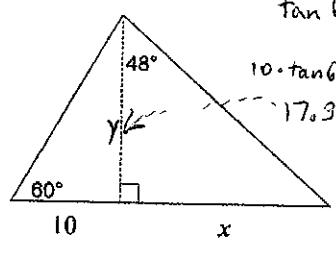
$$\sin 55 = \frac{96.5}{x}$$

$$x \cdot \sin 55 = 96.5$$

$$x = \frac{96.5}{\sin 55}$$

$$x \approx 117.8$$

14)



$$\tan 60 = \frac{y}{10}$$

$$10 \cdot \tan 60 = y$$

$$17.3 = y$$

$$\tan 48 = \frac{x}{17.3}$$

$$17.3 \cdot \tan 48 = x$$

$$19.2 \approx x$$

Find the measure of the indicated angle to the nearest degree.

15)

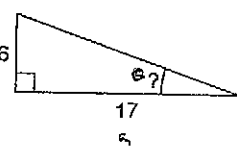


$$\tan \theta = \frac{4}{6}$$

$$\theta = \tan^{-1}\left(\frac{4}{6}\right)$$

$$\theta \approx 33.7$$

16)



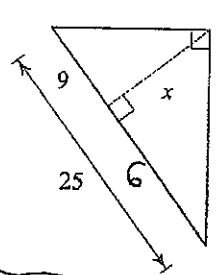
$$\tan \theta = \frac{6}{17}$$

$$\theta = \tan^{-1}\left(\frac{6}{17}\right)$$

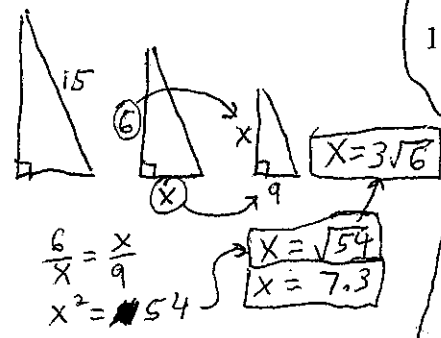
$$\theta = 19.4$$

Find the missing length indicated. Leave your answer in simplest radical form.

17)



$$\frac{25}{6} - \frac{9}{6}$$



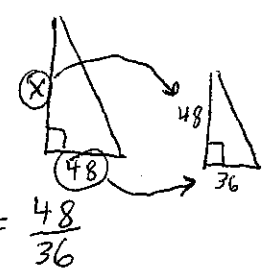
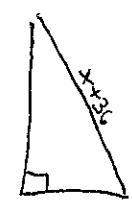
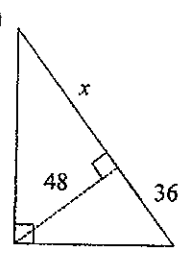
$$\frac{6}{x} = \frac{x}{9}$$

$$x^2 = 54$$

$$x = \sqrt{54}$$

$$x = 3\sqrt{6}$$

18)



$$\frac{64}{48} = \frac{48}{x-64}$$

$$64x - 4096 = 2304$$

$$+4096 \quad +4096$$

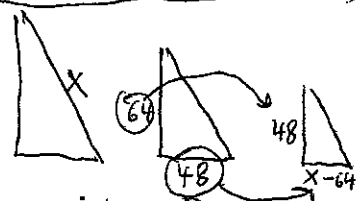
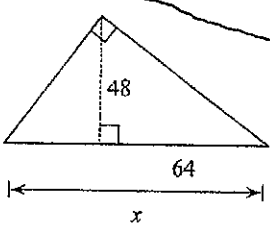
$$64x = 6400$$

$$\frac{64}{64} = \frac{6400}{64} \Rightarrow x = 100$$

$$\frac{36x}{36} = \frac{2304}{36}$$

$$x = 64$$

19)



Show all your work including a picture. Round your answer to the nearest tenth.

20) A soccer ball is placed 10 ft away from the goal, which is 8 ft high. You kick the ball and it hits the crossbar along the top of the goal. What is the angle of elevation of the ball after it is kicked?

$$\tan \theta = \frac{8}{10}$$

$$\theta = \tan^{-1}\left(\frac{8}{10}\right)$$

$$\theta = 38.7^\circ$$

