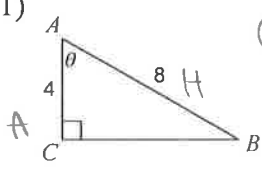
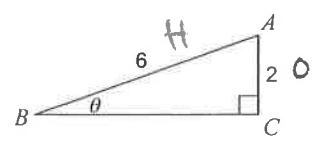


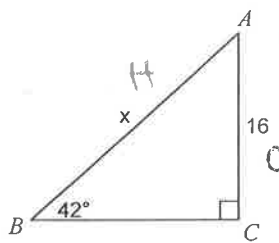
WS PC #3 Review Unit 8/9

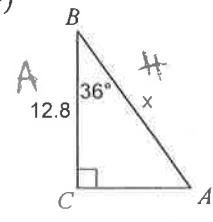
Find the measure of each angle indicated. Round to the nearest tenth.

1)  $\cos^{-1}\left(\frac{4}{8.5}\right)$
 $\boxed{60^\circ}$

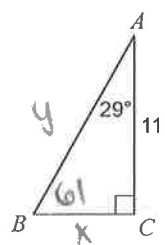
2)  $\sin^{-1}\left(\frac{2}{6}\right)$
 $\boxed{19.5^\circ}$

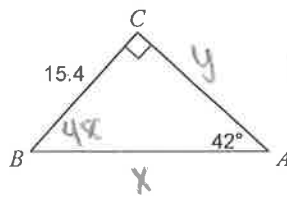
Find the measure of each side indicated. Round to the nearest tenth.

3)  $\frac{\sin 42 = \frac{16}{x}}$
 $x \sin 42 = \frac{16}{\sin 42}$
 $\boxed{x = 23.9}$

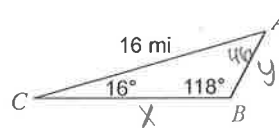
4)  $\frac{\cos 36 = \frac{12.8}{x}}$
 $x \cos 36 = \frac{12.8}{\cos 36}$
 $\boxed{x = 15.8}$

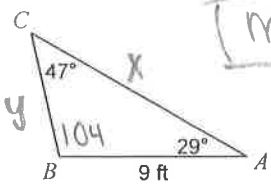
Solve each triangle. Round answers to the nearest tenth.

5)  $m\angle B = 61^\circ$
 $\tan 29 = \frac{x}{11}$
 $11 \tan 29 = x$
 $\boxed{x = 6.1}$
 $\sin 61 = \frac{11}{y}$
 $y \sin 61 = 11$
 $\boxed{y = 12.6}$

6)  $m\angle B = 48^\circ$
 $\frac{\sin 42 = \frac{15.4}{x}}$
 $x \sin 42 = \frac{15.4}{\sin 42}$
 $\boxed{x = 23.0}$
 $\tan 42 = \frac{15.4}{y}$
 $y \tan 42 = \frac{15.4}{\tan 42}$
 $\boxed{y = 17.1}$

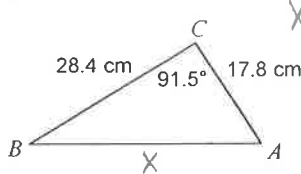
Solve each triangle. Round your answers to the nearest tenth.

7)  $m\angle A = 46^\circ$
 $\frac{\sin 118}{16} = \frac{\sin 46}{x}$
 $x \sin 118 = \frac{16 \sin 46}{\sin 118}$
 $\boxed{x = 13.0}$
 $\frac{\sin 118}{16} = \frac{\sin 16}{y}$
 $y \sin 118 = \frac{16 \sin 16}{\sin 118}$
 $\boxed{y = 5.0}$

8)  $m\angle B = 104^\circ$
 $\frac{\sin 47}{9} = \frac{\sin 104}{x}$
 $x \sin 47 = \frac{9 \sin 104}{\sin 47}$
 $\boxed{x = 11.9}$
 $\frac{\sin 47}{9} = \frac{\sin 29}{y}$
 $y \sin 47 = \frac{9 \sin 29}{\sin 47}$
 $\boxed{y = 6.0}$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

9)



$$x^2 = 28.4^2 + 17.8^2 - 2(28.4)(17.8) \cos 91.5$$

$$\sqrt{x^2} = \sqrt{1149.9}$$

$$x = 33.9 \text{ cm}$$

$$28.4^2 = 17.8^2 + 33.9^2 - 2(17.8)(33.9) \cos A$$

$$806.56 = 1466.05 - 1204.84 \cos A$$

$$-1466.05 - 1466.05$$

$$-659.49 = -1206.84 \cos A$$

$$\cos^{-1}\left(\frac{-659.49}{-1206.84}\right)$$

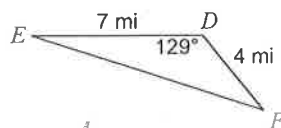
$$m\angle B = 31.6^\circ$$

$$\cos^{-1}\left(\frac{-659.49}{-1206.84}\right)$$

$$m\angle A = 56.9^\circ$$

Find the area of each triangle to the nearest tenth.

11)

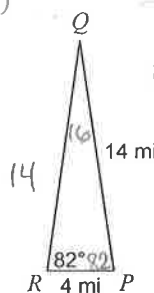


$$A = \frac{1}{2} bc \sin A$$

$$A = \frac{1}{2} (7)(4) \sin 129$$

$$A = 10.9 \text{ mi}^2$$

12)



$$\frac{\sin Q}{4} = \frac{\sin 82}{14}$$

$$14 \sin Q = 4 \sin 82$$

$$\sin^{-1}\left(\frac{4 \sin 82}{14}\right)$$

$$m\angle Q = 16$$

$$A = \frac{1}{2} (4)(14) \sin 82 = 27.7 \text{ mi}^2$$

13) The angle of elevation between the bottom of a fence and the top of a tree is 75 degrees. The tree is 4 feet from the fence. How tall is the tree? Round your answer to the nearest foot.

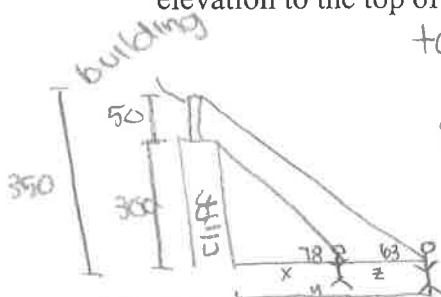


$$\tan 75 = \frac{x}{4}$$

$$4 \tan 75 = x$$

$$x = 15 \text{ ft}$$

14) A 50-meter tall building is constructed on top of a cliff that is 300 meters high. You are standing on level ground below the cliff and observe that the angle of elevation to the top of the building is 63 degrees. Your friend is standing between you and the cliff and observes that the angle of elevation to the top of the cliff is 78 degrees. How far apart are you and your friend?



$$\tan 78 = \frac{300}{x}$$

$$x \tan 78 = 300$$

$$x = 63.8$$

$$\tan 63 = \frac{350}{y}$$

$$y \tan 63 = 350$$

$$y = 178.3$$

$$178.3 - 63.8$$

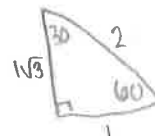
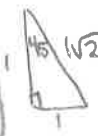
$$114.5 \text{ m}$$

15) Using a special right triangle, find each trig ratio (in simplest radical form).

a) $\sin 45 = \frac{1 \cdot \sqrt{2}}{\sqrt{2} \cdot \sqrt{2}}$

b) $\cos 30 = \frac{\sqrt{3}}{2}$

c) $\tan 60 = \sqrt{3}$



$$\sin 45 = \frac{\sqrt{2}}{2}$$