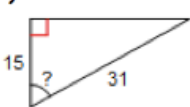
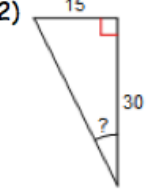
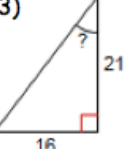


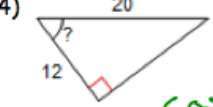
## 7.5 Practice Solutions

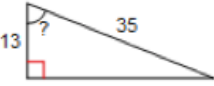
Directions: Find the measure of the indicated angle to the nearest degree.

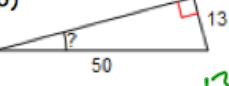
1)   $\cos X = \frac{15}{31}$   
 $X = \cos^{-1}\left(\frac{15}{31}\right)$   
 $X = 61^\circ$

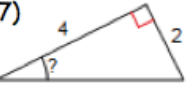
2)   $\tan X = \frac{15}{30}$   
 $X = \tan^{-1}\left(\frac{15}{30}\right)$   
 $X = 27^\circ$

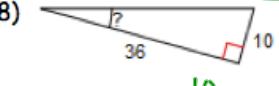
3)   $\tan X = \frac{16}{21}$   
 $X = \tan^{-1}\left(\frac{16}{21}\right)$   
 $X = 37^\circ$

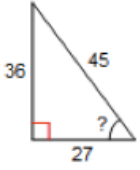
4)   $\cos X = \frac{12}{20}$   
 $X = \cos^{-1}\left(\frac{12}{20}\right)$   
 $X = 53^\circ$

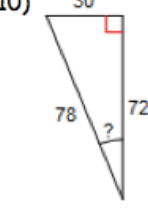
5)   $\cos X = \frac{13}{35}$   
 $X = \cos^{-1}\left(\frac{13}{35}\right)$   
 $X = 68^\circ$

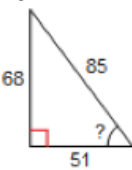
6)   $\sin X = \frac{13}{50}$   
 $X = \sin^{-1}\left(\frac{13}{50}\right)$   
 $X = 15^\circ$

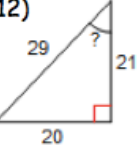
7)   $\tan X = \frac{2}{4}$   
 $X = \tan^{-1}\left(\frac{2}{4}\right)$   
 $X = 27^\circ$

8)   $\tan X = \frac{10}{36}$   
 $X = \tan^{-1}\left(\frac{10}{36}\right) = 16^\circ$

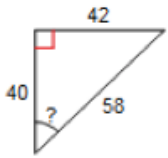
9)   $\cos X = \frac{27}{45}$   
 $X = \cos^{-1}\left(\frac{27}{45}\right)$   
 $X = 53^\circ$

10)   $\tan X = \frac{30}{72}$   
 $X = \tan^{-1}\left(\frac{30}{72}\right)$   
 $X = 23^\circ$

11)   $\sin X = \frac{68}{85}$   
 $X = \sin^{-1}\left(\frac{68}{85}\right)$   
 $X = 53^\circ$

12)   $\cos X = \frac{21}{29}$   
 $X = \cos^{-1}\left(\frac{21}{29}\right)$   
 $X = 44^\circ$

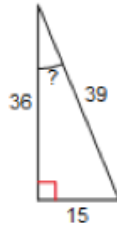
13)



$$\sin x = \frac{42}{58}$$

$$x = 46^\circ$$

14)



$$\tan x = \frac{15}{36}$$

$$x = \tan^{-1}\left(\frac{15}{36}\right)$$

$$x = 23^\circ$$

Directions: For each situation draw a picture and then solve. Round to the nearest whole degree.

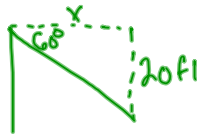
15) A man standing on a cliff 50 yards above the water spots a boat that is 150 yards out on the water. What is the angle of depression from the man to the boat?



$$\tan x = \frac{50}{150}$$

$$x = 18^\circ$$

16) A man in a tree shoots an arrow down towards a target at an angle of depression of  $60^\circ$ . How far is the target from the base of the tree?



$$\tan 60 = \frac{20}{x}$$

$$x = \frac{20}{\tan 60} = 11.5 \text{ feet}$$

17) A man climbs to the roof of his house 25 feet off the ground. He needs to run a wire to his satellite which is 10 feet from the base of his house. What angle of depression should the wire be at?



$$\tan x = \frac{25}{10}$$

$$x = \tan^{-1}\left(\frac{25}{10}\right)$$

$$x = 68^\circ$$