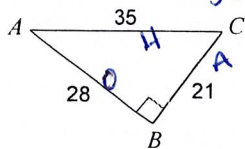


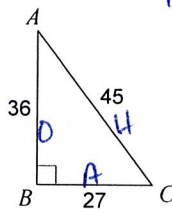
Trig Review Ratios and Missing Sides

Find the value of each trigonometric ratio.

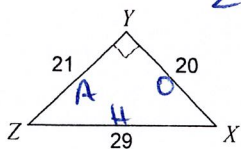
1)  $\cos C = \frac{21}{35} = \frac{3}{5}$



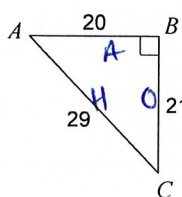
2)  $\cos C = \frac{27}{45} = \frac{3}{5}$



3)  $\tan Z = \frac{20}{21}$



4)  $\sin A = \frac{21}{29}$

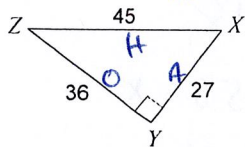


$\sin \theta = \frac{O}{H}$

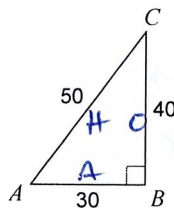
$\cos \theta = \frac{A}{H}$

$\tan \theta = \frac{O}{A}$

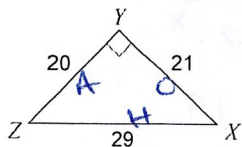
5)  $\sin X = \frac{36}{45} = \frac{4}{5}$



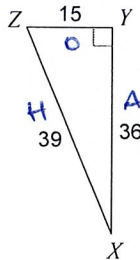
6)  $\cos A = \frac{30}{50} = \frac{3}{5}$



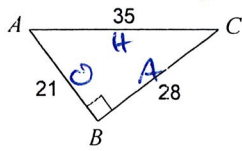
7)  $\tan Z = \frac{21}{20}$



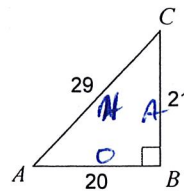
8)  $\cos X = \frac{36}{39} = \frac{12}{13}$



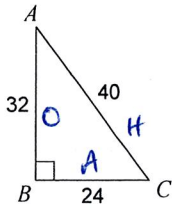
$$9) \cos C = \frac{28}{35} = \frac{4}{5}$$



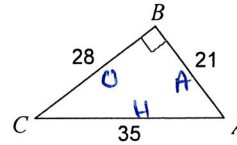
$$10) \sin C = \frac{20}{29}$$



$$11) \tan C = \frac{32}{24} = \frac{4}{3}$$



$$12) \sin A = \frac{28}{35} = \frac{4}{5}$$



Find the missing side. Round to the nearest tenth.

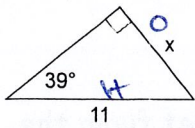
13)  $\sin 57 = \frac{x}{11}$   
 $11 \cdot \sin 57 = x$   
 $9.2 = x$

14)  $\tan 58 = \frac{x}{18}$   
 $18 \cdot \tan 58 = x$   
 $28.8 = x$

15)  $\sin 50 = \frac{x}{16}$   
 $16 \sin 50 = x$   
 $12.3 = x$

16)  $\tan 67 = \frac{10}{x}$   
 $x = \frac{10}{\tan 67}$   
 $= 4.2$

17)

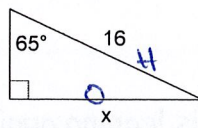


$$\sin 39 = \frac{x}{11}$$

$$11 \sin 39 = x$$

$$6.9 = x$$

18)

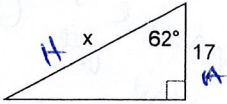


$$\sin 65 = \frac{x}{16}$$

$$16 \sin(65) = x$$

$$14.5 = x$$

19)

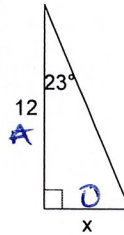


$$\cos 62 = \frac{17}{x}$$

$$x = \frac{17}{\cos(62)}$$

$$= 36.2$$

20)

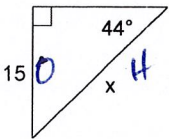


$$\tan(23) = \frac{x}{12}$$

$$12 \tan(23) = x$$

$$5.1 = x$$

21)

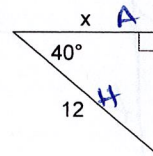


$$\sin 44 = \frac{15}{x}$$

$$x = \frac{15}{\sin(44)}$$

$$= 21.6$$

22)

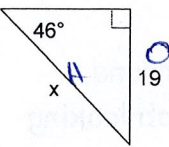


$$\cos(40) = \frac{12}{x}$$

$$12 \cos(40) = x$$

$$9.2 = x$$

23)

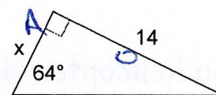


$$\sin 46 = \frac{19}{x}$$

$$x = \frac{19}{\sin(46)}$$

$$x = 26.4$$

24)

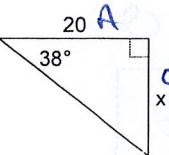


$$\tan(64) = \frac{14}{x}$$

$$x = \frac{14}{\tan(64)}$$

$$x = 6.8$$

25)

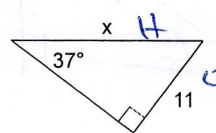


$$\tan 38 = \frac{x}{20}$$

$$20 \tan(38) = x$$

$$15.6 = x$$

26)

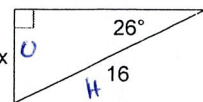


$$\sin(37) = \frac{11}{x}$$

$$x = \frac{11}{\sin(37)}$$

$$= 18.3$$

27)

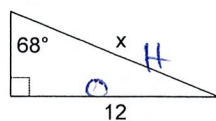


$$\sin(26) = \frac{x}{16}$$

$$16 \sin(26) = x$$

$$7.0 = x$$

28)

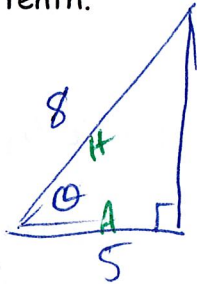


$$\sin(68) = \frac{12}{x}$$

$$x = \frac{12}{\sin(68)}$$

$$= 12.9$$

11. An 8 foot ladder is leaning against a wall so that the base is 5 feet from the base of the wall. What angle does the ladder make with the ground? Round to the nearest tenth.



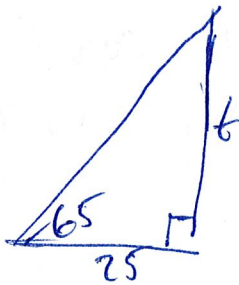
$$\cos \theta = \frac{5}{8}$$

$$\cos^{-1}\left(\frac{5}{8}\right) = \theta$$

$$\boxed{51.3^\circ = \theta}$$

Make sure  
you are comfortable  
finding angles  
AND sides!

12. A surveyor is standing 25 feet from a building and is looking at the top with an angle of elevation of  $65^\circ$ . How tall is the building? Round to the nearest tenth.

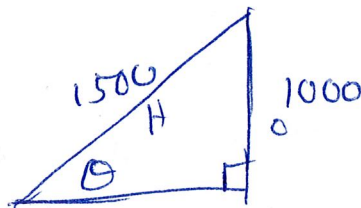


$$\tan(65) = \frac{t}{25}$$

$$25 \cdot \tan(65) = t$$

$$\boxed{53.6 = t}$$

13. Bob is looking at a helicopter that is flying 1,000 feet above the ground. Bob is 1,500 feet from the helicopter. At what angle of elevation is Bob looking at the helicopter? Round to the nearest tenth.

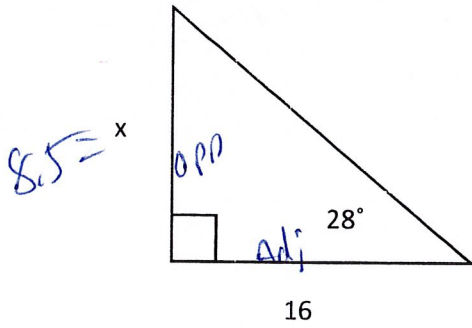


$$\sin \theta = \frac{1000}{1500}$$

$$\sin^{-1}\left(\frac{1000}{1500}\right) = \theta$$

$$\boxed{41.8^\circ = \theta}$$

20. Find the area of the triangle.  $A = \frac{1}{2}bh$



Find  $x$  1st

$$\tan(28) = \frac{x}{16}$$

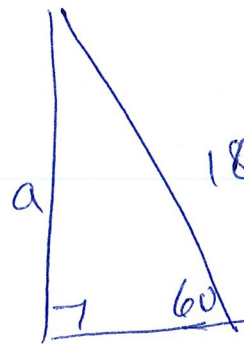
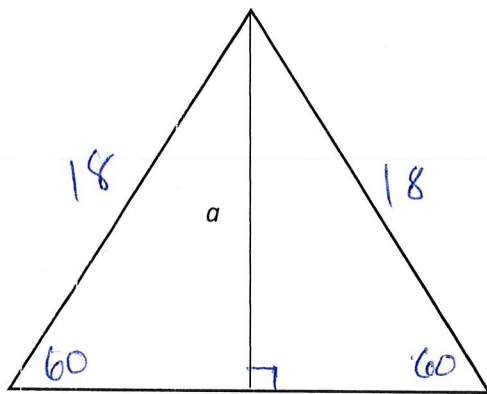
$$16 \tan(28) = x$$

$$8.5 = x$$

$$A_D = \frac{1}{2}bh = \frac{1}{2}(16)(8.5)$$
$$= 68$$

21. Each side of an equilateral triangle measures 18 cm.

Find the length of an altitude,  $a$ , of the triangle.



$$\sin 60 = \frac{a}{18}$$

$$18 \sin 60 = a$$

$$9\sqrt{3} = a$$

$$15.6 \approx a$$

