

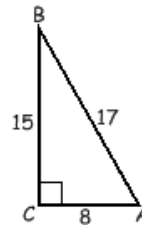


RIGHT TRIANGLE TRIG

1) a) Find the 3 trig ratios from Angle A and Angle B.

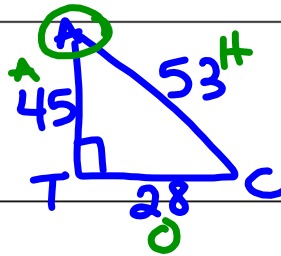
sin A: $15/17$ sin B: $8/17$
 cos A: $8/17$ cos B: $15/17$
 tan A: $15/8$ tan B: $8/15$

therefore the sin A = $\cos B$ & cos A = $\sin B$



2) Draw $\triangle CAT$ where $\angle ATC = 90^\circ$, $CA = 53$, and $CT = 28$.

a) What is the length of AT? 45
 b) What is $\sin C$? $45/53 = .8491$
 c) What is $\tan A$? $28/45 = .6222$



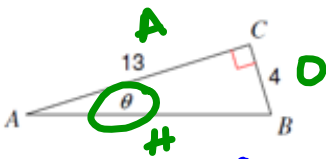
3) Draw $\triangle ABC$ where $\angle B = 90^\circ$ and $\sin A = \frac{16}{20}$.

a) What is the length of AB? 12
 b) What is $\tan A$? $16/12$
 c) What is $\cos A$? $12/20$

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4) Solve for the missing side or angle using Trig Ratios (sin, cos, tan).

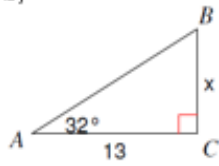
a)



$$\theta = 17.1^\circ$$

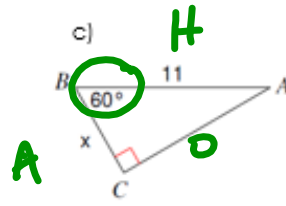
$$\tan^{-1}\left(\frac{4}{13}\right)$$

b)



$$x = 8.12$$

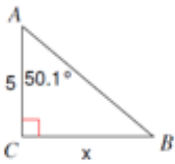
c)



$$x = 5.5$$

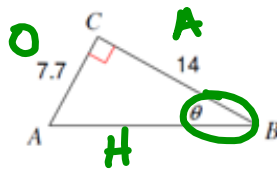
$$\cos 60^\circ = \frac{x}{11} \quad 11 \cdot \cos 60^\circ = x$$

d)



$$x = 5.98$$

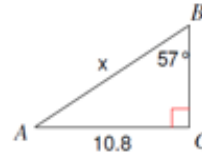
e)



$$\theta = 28.8^\circ$$

$$\tan^{-1}\left(\frac{7.7}{14}\right)$$

f)



$$x = 12.88$$

5) 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.

angle of elevation is 57.3° $\cos^{-1}(\frac{5}{8})$



6) A surveyor is standing 25 feet from a building and is looking at the top with an angle of elevation of 65° . How tall is the building? Round to the nearest tenth.

The building is 53.6 ft tall



$$\tan 65 = \frac{x}{25}$$

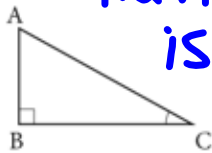
$$25 \tan 65 = x$$

7) A kite is being flown using 150 yards of string. The kite has an angle of elevation with the ground of 65 degrees. How high above the ground is the kite?

The kite is 135.9 yards above ground

8) In the triangle, $BC = 12$ cm and $\tan \angle C = 0.75$. What is the measure in degrees of angle C? What is the length of the hypotenuse?

The hypotenuse is 15 cm.



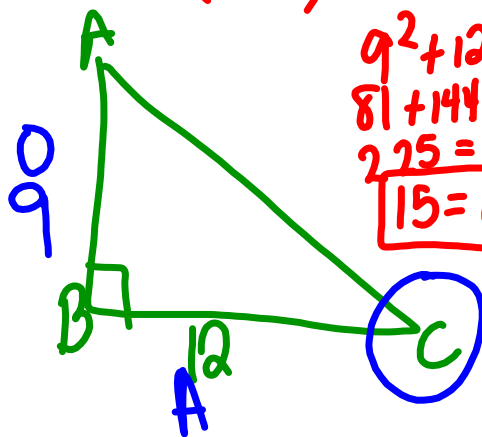
$$m\angle C = 36.87^\circ$$

$$\tan^{-1}(0.75)$$

$$0.75 = \frac{75}{100} = \frac{3}{4}$$

$$\frac{3}{4} = \frac{x}{12}$$

$$4x = 36 \quad x = 9$$



$$9^2 + 12^2 = AC^2$$

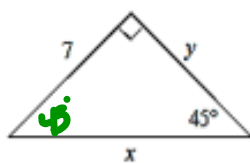
$$81 + 144 = AC^2$$

$$225 = AC^2$$

$$\boxed{15 = AC}$$

9. Find all missing sides using trig ratios:

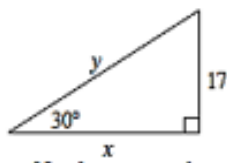
a.



$$y = 7$$

$$x = 9.89$$

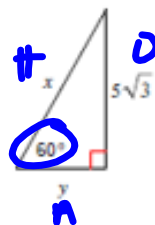
b.



$$y = 34$$

$$x = 29.4$$

c.



$$x = 10$$

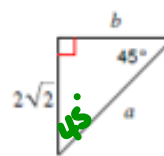
$$y = 5$$

$$\sin 60 = \frac{5\sqrt{3}}{x}$$

$$x = \frac{5\sqrt{3}}{\sin 60}$$

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

d.



$$b = 2\sqrt{2}$$

$$2.8$$

$$a = 4$$