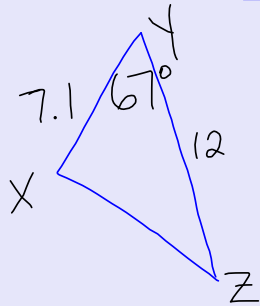


**Cereal Food Drive!**

**Winning Class will be  
rewarded!**

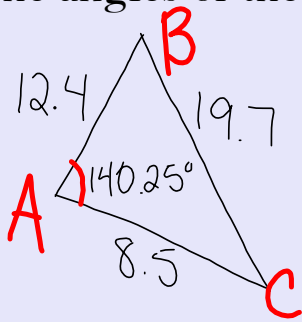
## Warm Up-

Find the area of  $\triangle XYZ$  if  $m \angle Y = 67^\circ$  and  $x = 12$  and  $z = 7.1$



$$\frac{7.1 \cdot 12 \cdot \sin 67}{2} = \boxed{39.21 \text{ in}^2}$$

You are flying the perimeter of the Bermuda Triangle. The distances you fly are 12.4 miles, 19.7 miles, and 8.5 miles. Find all the angles of the Bermuda Triangle.



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

$$19.7^2 = 8.5^2 + 12.4^2 - (2(12.4)(8.5) \cos A)$$

$$\frac{19.7^2 - 8.5^2 - 12.4^2}{-2(12.4)(8.5)} = \cos A$$

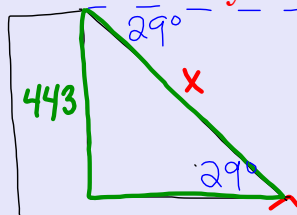
$$\frac{162.08}{-210.8} = \cos A$$

$$-.77 = \cos A$$

$$.765349721 \quad \cos^{-1}(-.77) = 140.25^\circ$$

$$b^2 = a^2 + c^2 - 2ac \cos B$$

You are on top of the empire state building looking down at a snake on the ground. The angle of depression is  $29^\circ$  and the empire state building is 443 meters tall. What is the direct distance from you to the snake?

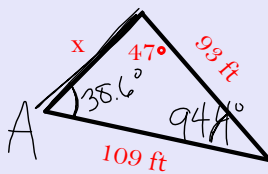


$$\sin 29 = \frac{443}{x}$$

$$x = 913.76m$$

$$x \cdot \frac{\sin 29}{\sin 29} = \frac{443}{\sin 29}$$

You are at soccer practice passing between you and your two friends. Find how far you have to pass the ball to your friend.



$$\frac{\sin(47)}{109} = \frac{\sin(A)}{93}$$

$$180 - 47 - 38.6 \quad \frac{93 \cdot \sin(47)}{109} = \sin(A)$$

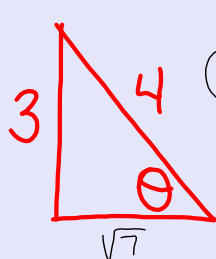
$$= 94.4$$

$$\frac{\sin(47)}{109} = \frac{\sin(94.4)}{x} \quad .62 = \sin(A)$$

$$\sin^{-1}(.62) = 38.6^\circ$$

$$\frac{109 \cdot \sin(94.4)}{\sin(47)} = 148.6 \text{ ft}$$

$$\sin \theta = \frac{3}{4}$$



$$\cos \theta = \frac{\sqrt{7}}{4}$$

$$\tan \theta = \frac{3}{\sqrt{7}}$$

$$\csc \theta = \frac{4}{3}$$

$$\sec \theta = \frac{4}{\sqrt{7}}$$

$$\cot \theta = \frac{\sqrt{7}}{3}$$

$$3^2 + b^2 = 4^2$$

$$b^2 = 16 - 9$$

$$b = \sqrt{7}$$

**Homework! Workbook Pg 80-81 #2, 4, 7, 9, 10, 13, 14.**