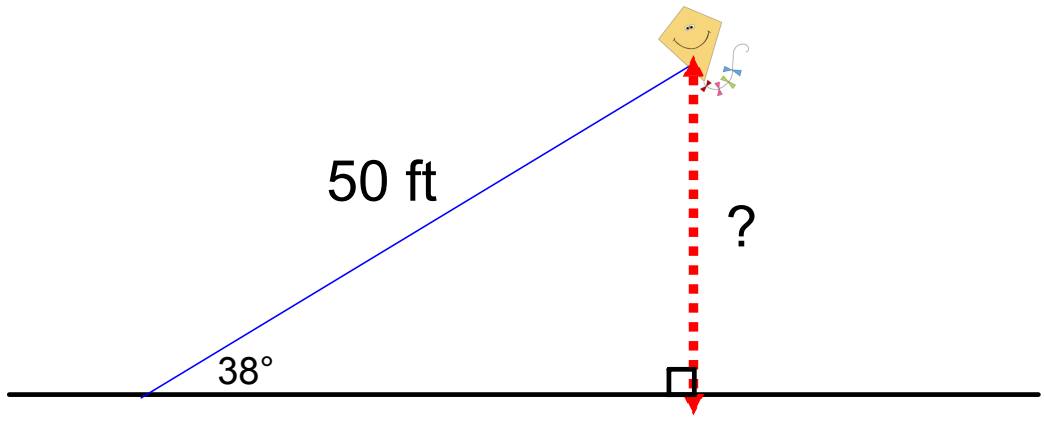
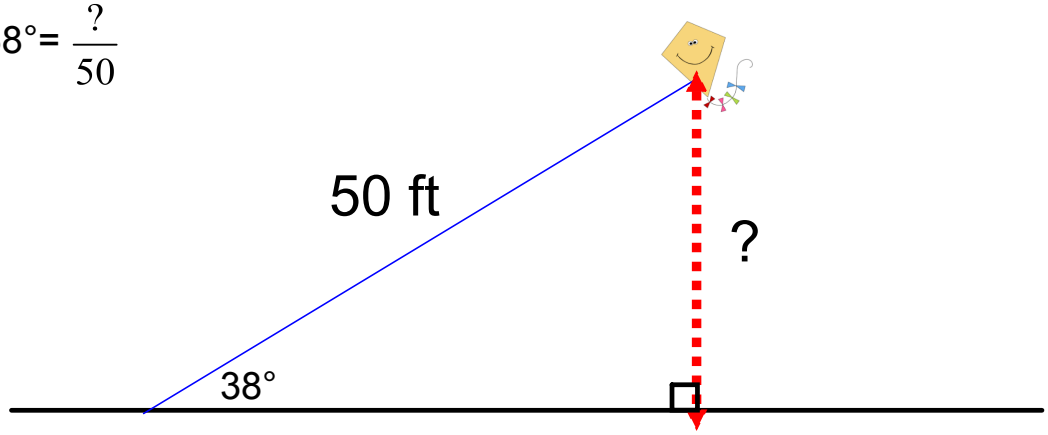
Module 13 - Trigonometry (Today you need your notes and a calculator)

-Question to ponder (again):

If you are flying a kite, you know the length of the string, and you know the angle that the string is making with the ground, can you figure out how high the kite is?



$\sin 38° = \frac{?}{50}$

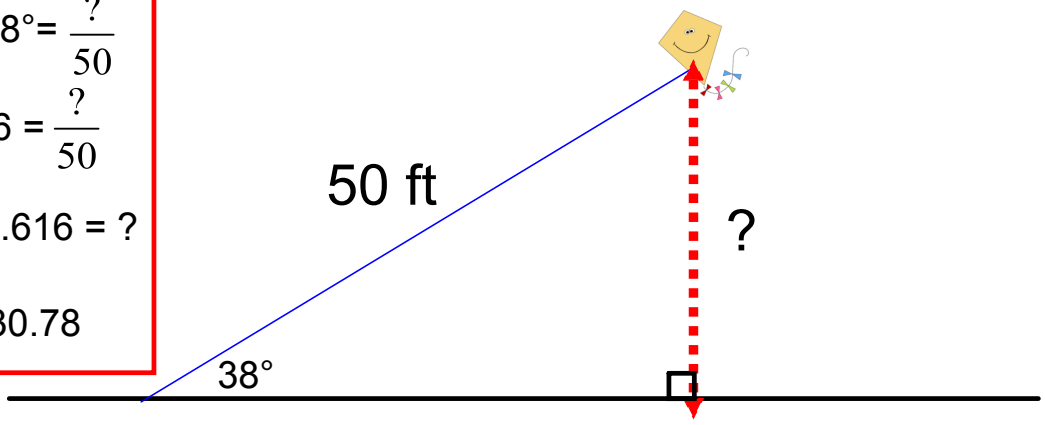


$\sin 38° = \frac{?}{50}$

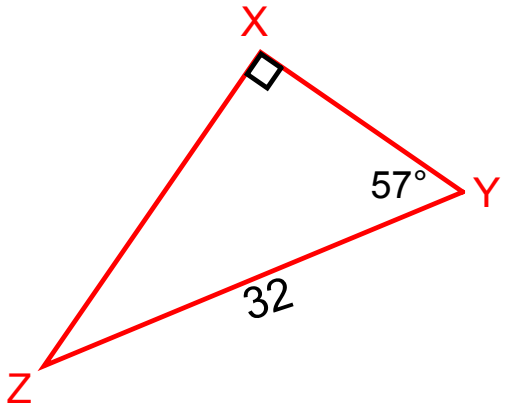
$0.616 = \frac{?}{50}$

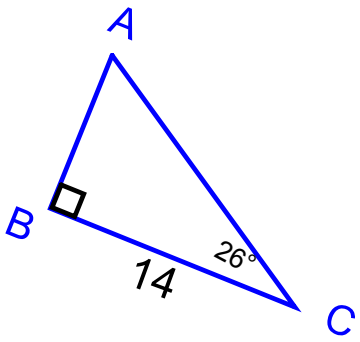
50 x 0.616 = ?

? = 30.78



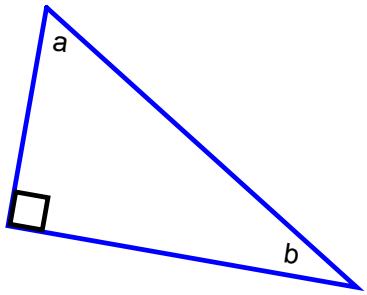
Find XZ and XY by setting up two separate trigonometric equations.





Find the measure of the hypotenuse (AC)

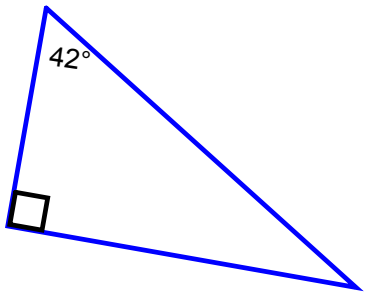
Relationship of complementary angles and their sines and cosines.



sin(a) = cos(b) = cos(90-a)

cos(a) = sin(b)= sin(90-a)

Relationship of complementary angles and their sines and cosines.



Calculate the following:

sin(42°) =

cos(42°) =

Are there any other trig ratios that would give the same values?

Find the complementary trig ratio with the same value:

sin(21°) =

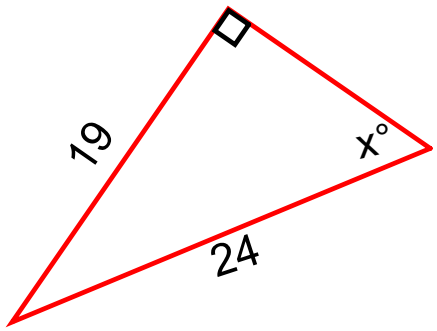
cos(50°) =

sin(7°) =

sin(45°) =

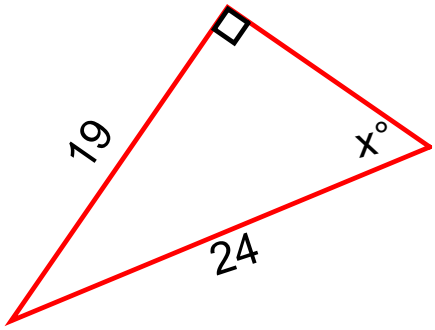
cos(89°) =

What if we have side lengths, but want to use trigonometry to find a missing angle?



We can set up a similar equation.

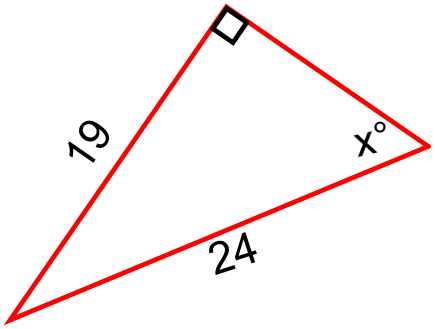
$\sin(x) = \frac{19}{24}$



We can set up a similar equation.

$\sin(x) = \frac{19}{24}$

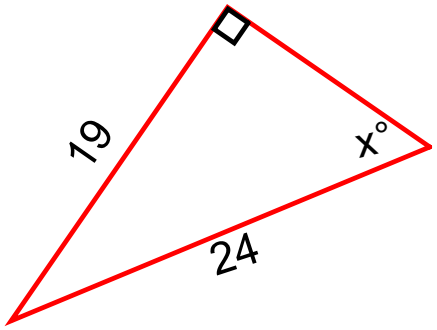
$\sin(x) = .792$



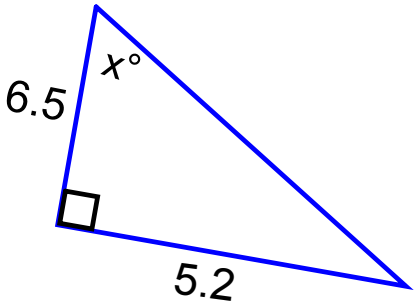
Now we can use our inverse sin function to figure out the measure of the angle, x:

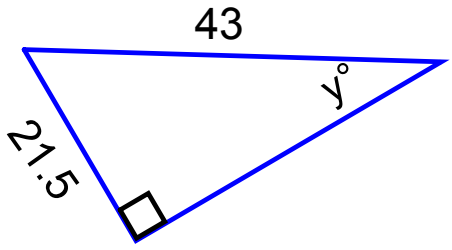
sin(x) = .792

$\sin^{-1}(.792) \approx 52°$



Find the measure of x and y in each triangle:





Work the following problems in your books:

703-704, #'s 1-16

693-694, #'s 9-20