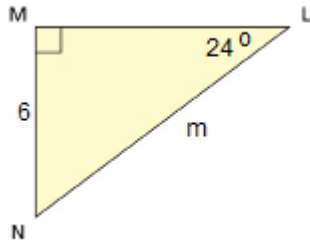**Self Check: Possible Solutions:**

SC 1. In the following triangle, find the missing side m. Round to the nearest hundredth.

$$\sin 24^{o} = \frac{6}{m}$$

Multiply each side by m and then cancel the m's on the right

$$m(\sin 24^{0}) = m\left(\frac{6}{m}\right)$$

$$m(\sin 24^{o}) = \not{m}\left(\frac{6}{\not{m}}\right)$$

$$m(\sin 24^{0}) = 6$$

Divide each side by sin 24⁰,

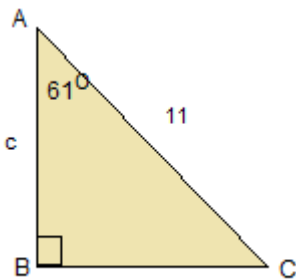$$\frac{m(\sin 24^{o})}{\sin 24^{0}} = \frac{6}{\sin 24^{o}}$$

$$m = \frac{6}{\sin 24^{0}}$$

m = 14.75

SC 2. In the following triangle, find the missing side c. Round to the nearest hundredth.
NOTE: Labeling notation has the lower case letter on the side ACROSS from the angle that uses upper case letter

$$\cos 61^{0} = \frac{c}{11}$$

Multiply each side by 11 and then cancel the 11's on the right to isolate the variable c
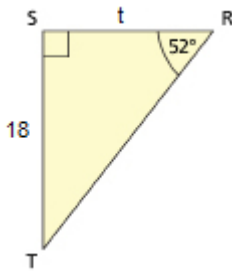
$$11(\cos 61^0) = 11\left(\frac{c}{11}\right)$$

$$11(\cos 61^0) = \cancel{11}\left(\frac{c}{\cancel{11}}\right)$$

Now $c = 11(\cos 61^0)$

c =5.33

SC 3. Find the length of t in the following diagram. Round to the nearest hundredth.

$$\tan 52^o = \frac{18}{t}$$

Multiply each side by t and then cancel the t's on the right

$$t(\tan 52^o) = t\left(\frac{18}{t}\right)$$

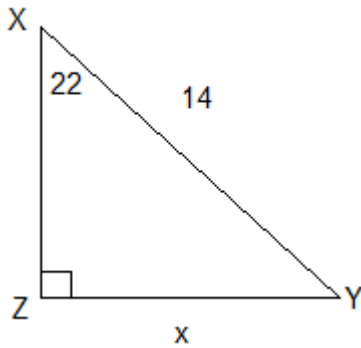$$t(\tan 52^o) = \cancel{t}\left(\frac{18}{\cancel{t}}\right)$$

Divide by tan 52

$$\frac{t(\tan 52^0)}{\tan 52^o} = \frac{18}{\tan 52^o}$$

$$t = \frac{18}{\tan 52^o}$$

t=14.06

SC4: Given the right triangle, XYZ, with <Z =90°, <X = 22°, and z = 14 cm, find x. Round to the nearest hundredth.

Start by drawing the triangle. The Z has to be the right angle but the other angles can be in either place as long as you label the sides correctly.

NOTE: Labeling notation has the lower case letter on the side ACROSS from the angle that uses upper case letter

So that places x on the bottom side.
Since x is the opposite side and 14 is the hypotenuse, this is a sin question.

$$\sin 22^0 = \frac{x}{14}$$

multiply both sides by 14 and cancel

$$14(\sin 22^o) = 14\left(\frac{x}{14}\right)$$

$$14(\sin 22^o) = 14\left(\frac{x}{14}\right)$$

x = 14(sin 22°)

x = 5.24