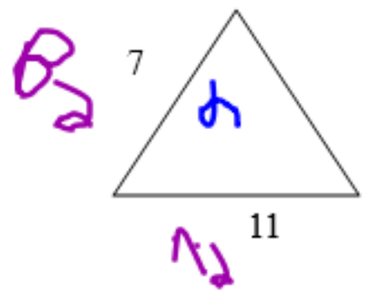
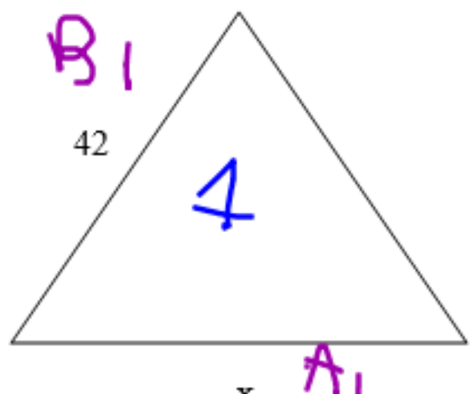
Trigonometry Notes

Name_____

Similar Triangles





Are these triangles similar?
How can you tell?

Yes

They are an increased version of eachother

$$\frac{A_1}{B_1} = \frac{A_2}{B_2}$$

$$\frac{x}{11} = \frac{42}{7}$$

$$x = 66$$

Solve for x

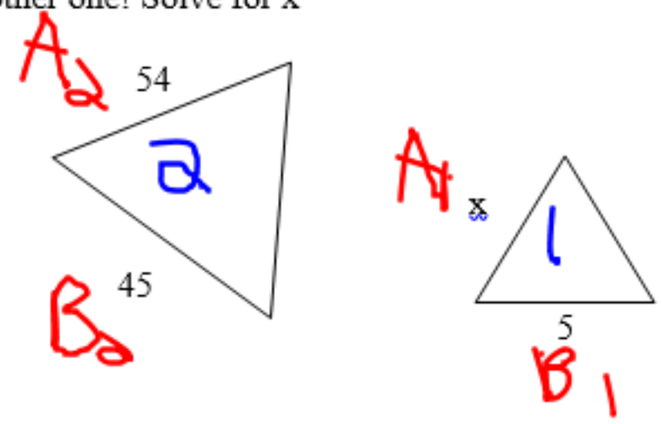
Put your unknown on the top left

The get it alone using inverse operations

Finally, solve for the unknown

Let's try another one! Solve for x

Let's try another one! Solve for x



$$\frac{A_1}{A_2} = \frac{B_1}{B_2}$$

$$\frac{x}{54} = \frac{5}{45}$$

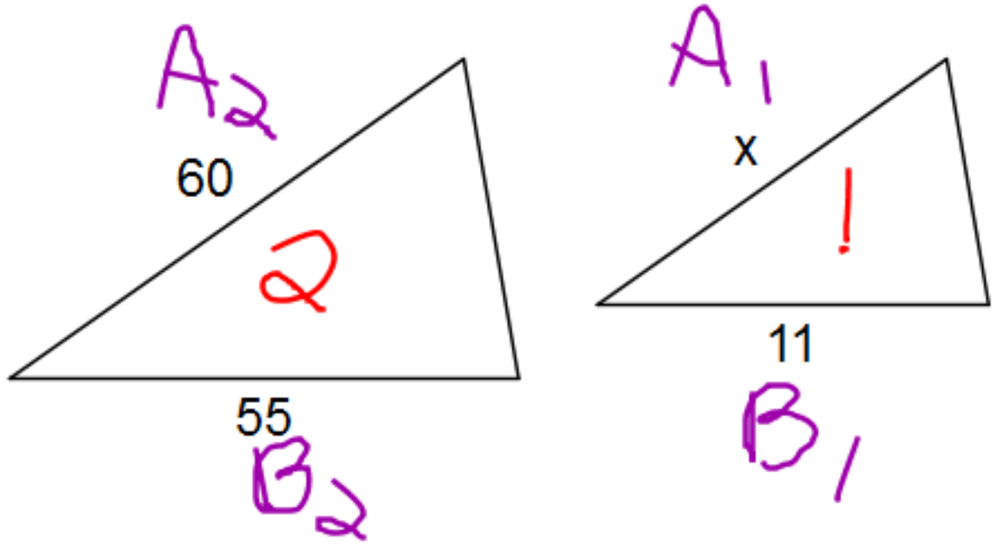
$$45x = 270$$

$$\frac{45}{45} \quad \frac{45}{45}$$

$$x = 6$$

Each pair of figures is similar. Find the missing side.

2)



A_2 B_2 A_1 B_1

$$\frac{A_1}{A_2} = \frac{B_1}{B_2}$$

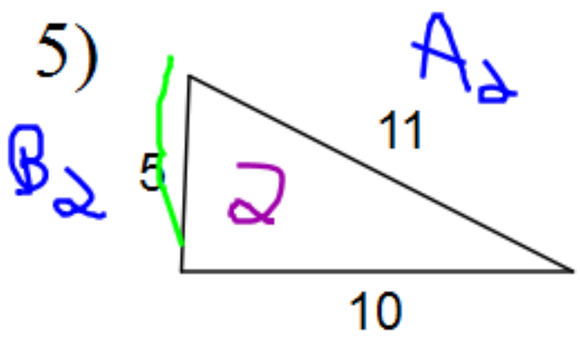
$$\frac{x}{60} \quad \frac{11}{55}$$

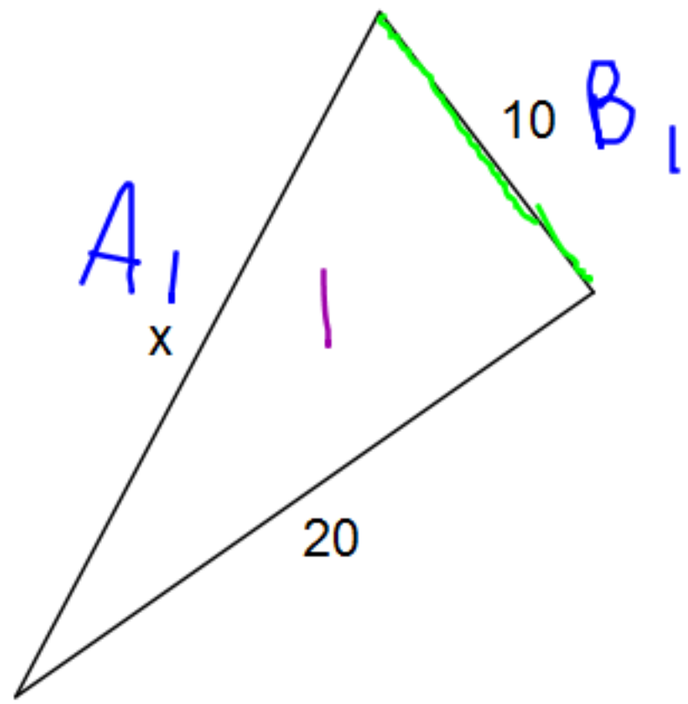
$$\frac{660}{55} = \frac{55x}{55}$$

$$12 = x$$

Each pair of figures is similar. Find the missing side.

5)





$$\frac{A_1}{A_2} = \frac{B_1}{B_2}$$

$$\frac{x}{11} = \frac{10}{5}$$

$$\frac{5x}{5} = \frac{110}{5}$$

$$x = 22$$

Pythagorean Theorem

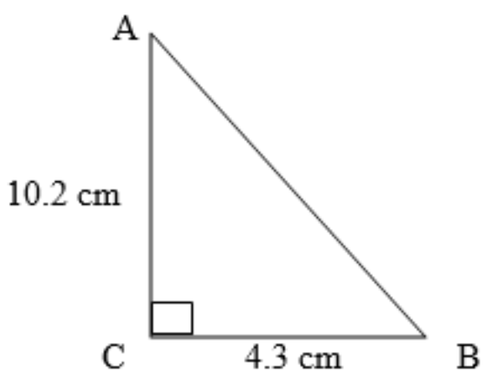
Used on right angle triangles.

a + b = c

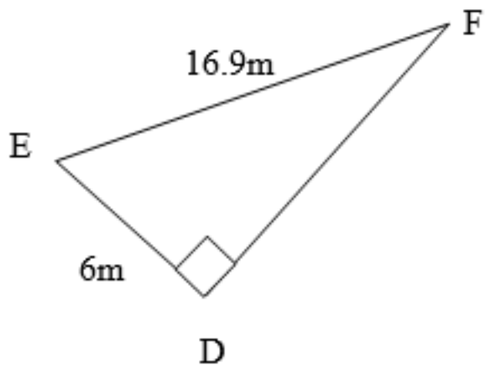
Your hypotenuse is always across from 90°

Remember - Triangle angles always add up to 180 degrees.

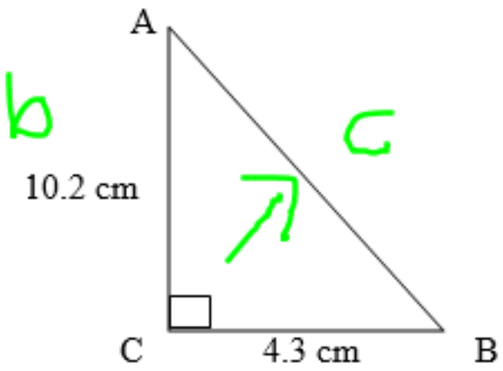
Solve for c



Solve for e



Solve for c



$a^2+b^2=c^2$

$4.3^2+10.2^2=c^2$

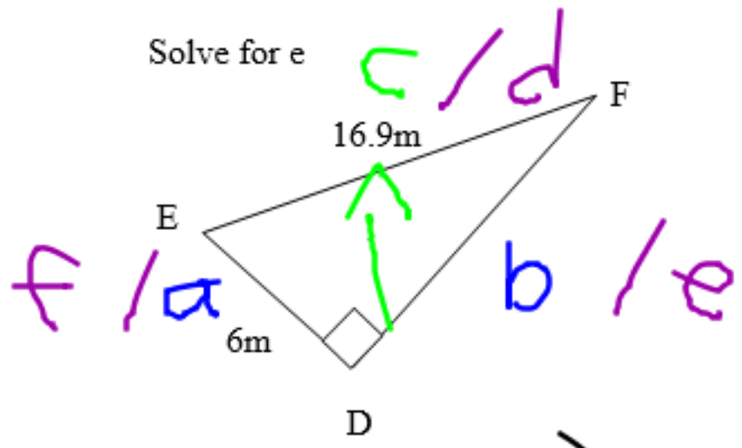
$18.49+104.04=c^2$

$\sqrt{122.53}=\sqrt{c^2}$

$11.07\text{cm}=c$

Solve for e

c / d



$a^2+b^2=c^2$

$6^2+e^2=16.9^2$

$-36 \quad -36$

$36+e^2=285.61$

$\sqrt{e^2}=\sqrt{249.61}$

$e=15.8\text{m}$

Remember the biggest angle corresponds with the biggest side, and the smallest angle corresponds with the smallest side.

What do the letters in "SOHCAHTOA" represent?

Do the following lengths form a right triangle?

11) $a = 6.5,\ b = 7.2,\ c = 8.4$

$a^2 + b^2 = c^2$

$6.5^2 + 7.2^2 = 8.4^2$

$42.25 + 51.84 = 70.56$

$94.09 = 70.56$

∴ Not right angle

NO