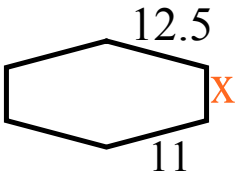
Warm Up

April 10, 2015

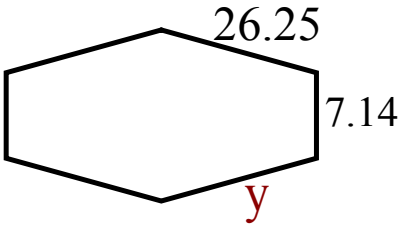
1) Find the length of the missing sides of the similar polygons
Show work



$\frac{x}{7.14} = \frac{12.5}{26.25}$

$x = \frac{7.14(12.5)}{26.25}$

$= 3.4$



$\frac{y}{11} = \frac{26.25}{12.5}$

$y = \frac{11(26.25)}{12.5}$

$= 23.1$

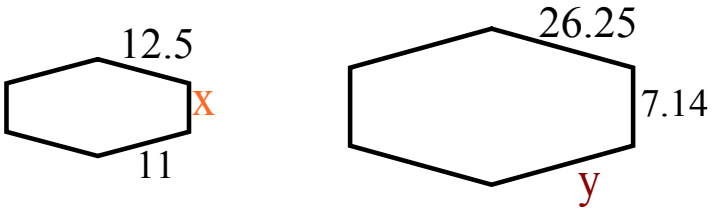
Questions from the homework...

6.

Warm Up

Solution

1) Find the length of the missing sides of the similar polygons



full ratio

$$\frac{12.5}{26.25} = \frac{x}{7.14} = \frac{11}{y}$$

$$\frac{12.5}{26.25} = \frac{x}{7.14}$$

cross multiply

$$26.25\,x = (12.5)(7.14)$$

$$26.25\,x = 89.25$$

solve for x

$$\frac{26.5\,x}{26.25} = \frac{89.25}{26.25}$$

$$x = 3.4$$

$$\frac{12.5}{26.25} = \frac{11}{y}$$

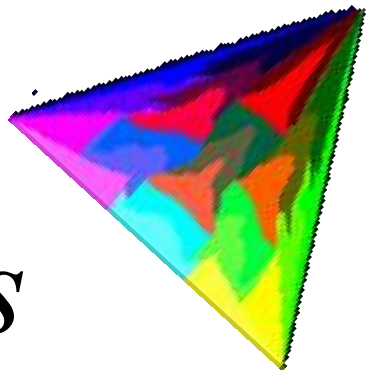
$$12.5\,y = (11)(26.25)$$

$$12.5\,y = 288.75$$

solve for y

$$\frac{12.5\,y}{12.5} = \frac{288.75}{12.5}$$

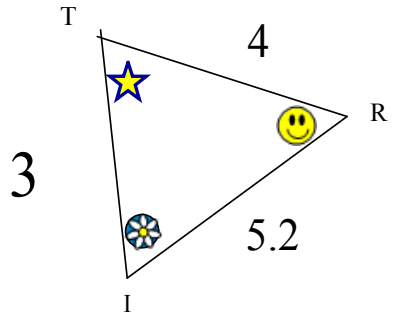
$$y = 23.1$$

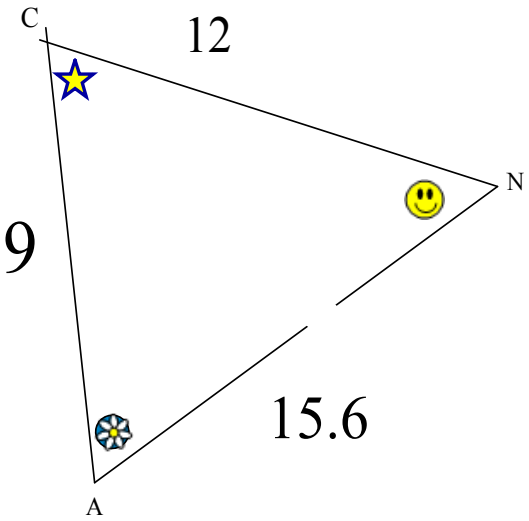


Triangles

Are these triangles similar?

Triangles are just polygons





Step 1) Match up Angles

$\Delta TRI \sim \Delta CNA$

erase

Let's Compare sides

Step 2) Set up ratios

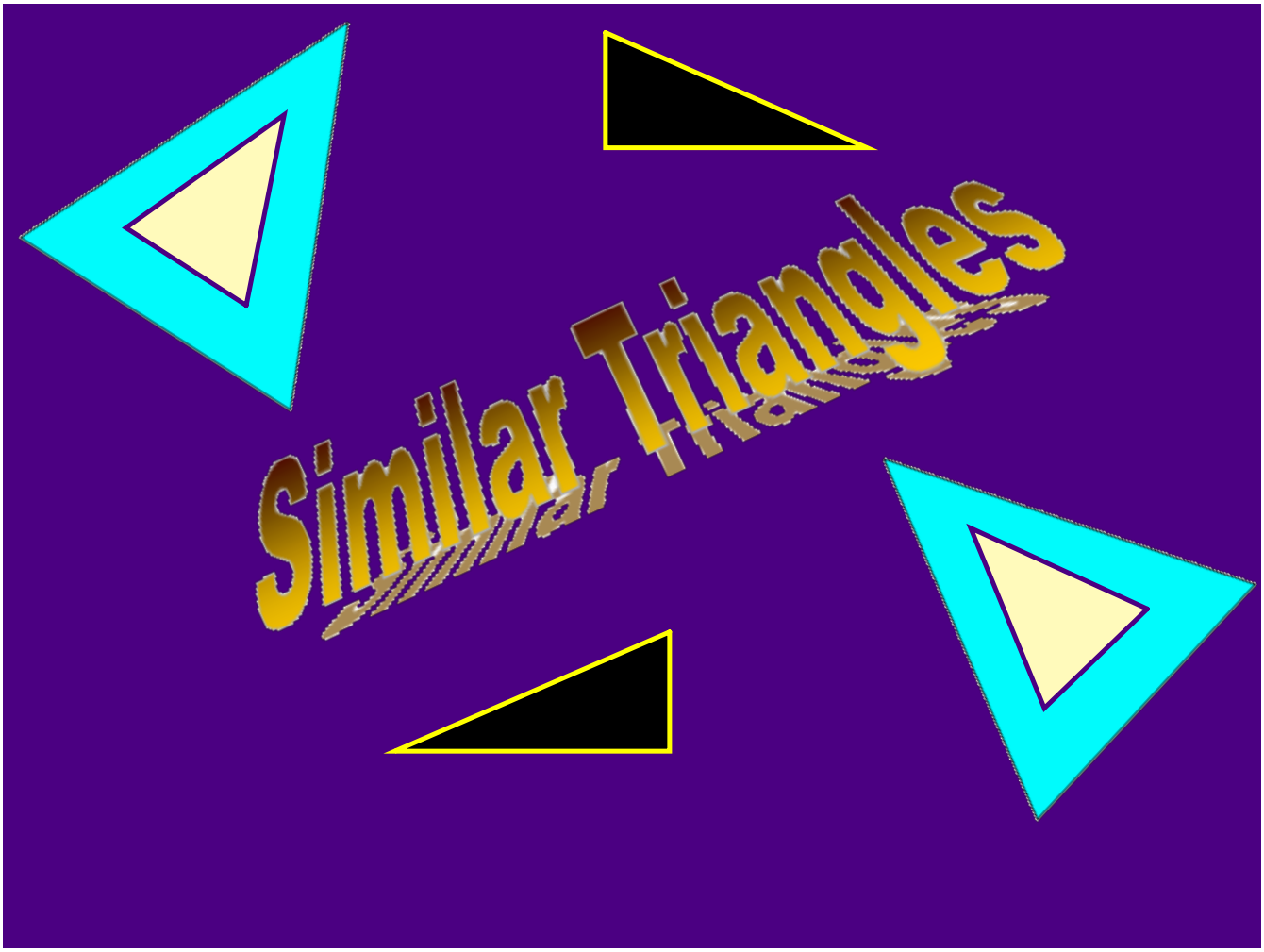
$$\frac{TR}{CN} = \frac{RI}{NA} = \frac{TI}{CA}$$

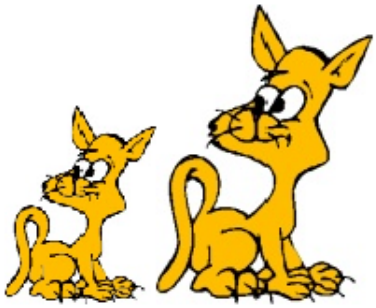
$$\frac{4}{12} = \frac{5.2}{15.6} = \frac{3}{9}$$

$$0.\overline{3} = 0.\overline{3} = 0.\overline{3}$$

Since corresponding sides are proportionate and angles are equal then

$\Delta TRI \sim \Delta CNA$


Similar Triangles



The cat on the right is an enlargement of the cat on the left. They are exactly the same shape, but they are NOT the same size.

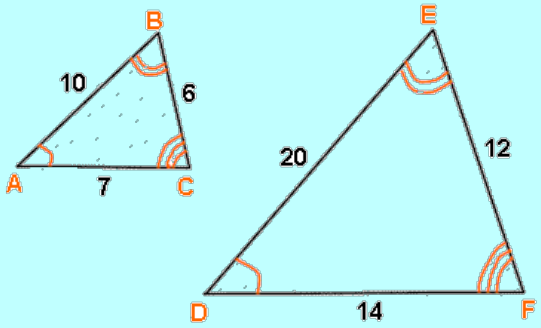
These cats are similar figures.

Objects, such as these two cats, that have the same shape, but do not have the same size, are said to be "similar".

The mathematical symbol used to denote similar is ~ .

Similar Symbol

~



Facts about similar triangles:	
$\measuredangle A \cong \measuredangle D$ $\measuredangle B \cong \measuredangle E$ $\measuredangle C \cong \measuredangle F$	$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$

Angles equal and sides are proportionate

$\triangle ABC \sim \triangle DEF$

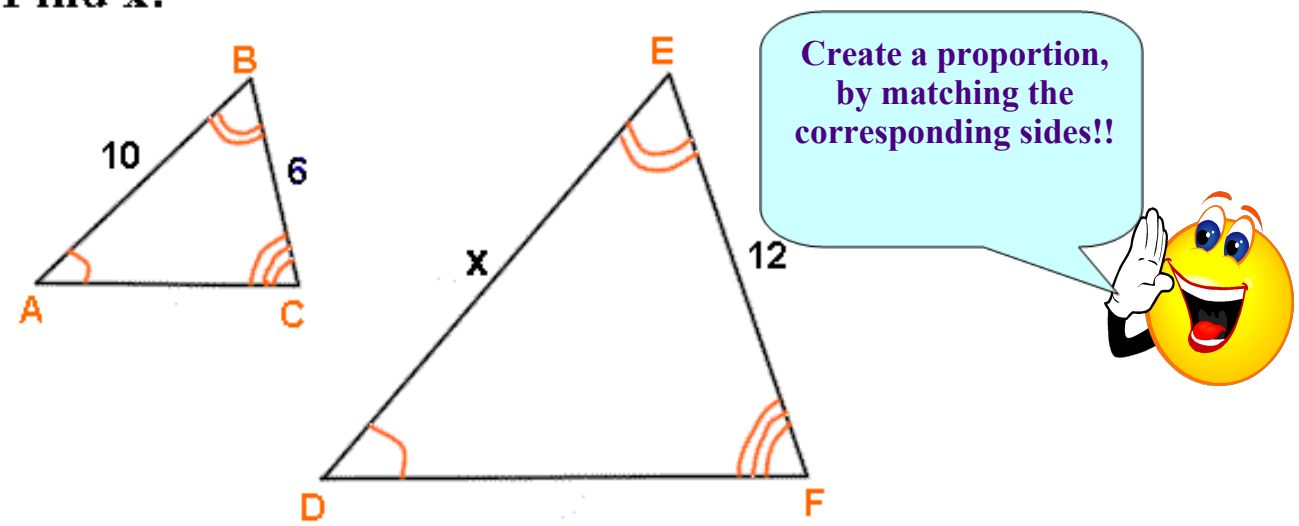
$\frac{AB}{DE} = \frac{BC}{EF} = \frac{AC}{DF}$

$\frac{10}{20} = \frac{6}{12} = \frac{7}{14}$

✓ $\frac{1}{2} = \frac{1}{2} = \frac{1}{2}$

WHAT YOU HAVE TO INCLUDE ON A TEST

Find x:



Write the Similarity Statement:

Write the proper ratios:

Fill in the ratios:

Solve:

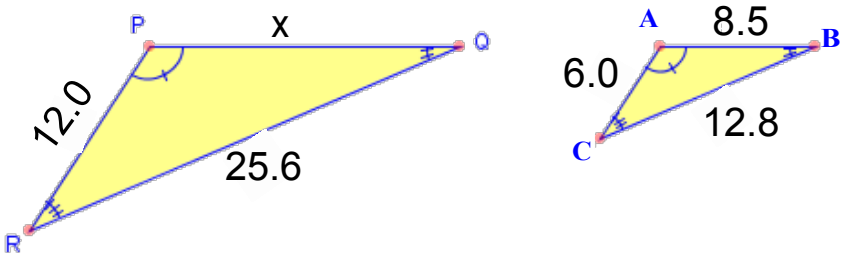
Try This !!

Solve for x .

2 ratios needed

You only need a full ratio and a ratio with the missing side

a)



Similarity statement $\triangle PQR \sim \triangle ABC$

$$\frac{PQ}{AB} = \frac{QR}{BC} = \frac{PR}{AC}$$

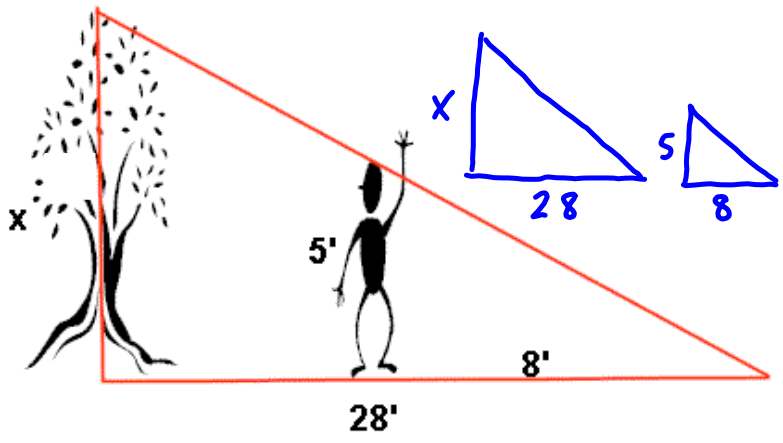
$$\frac{X}{8.5} = \frac{25.6}{12.8} = \frac{12.0}{6.0}$$

$$\frac{X}{8.5} = \frac{12.0}{6.0}$$

$$X = \frac{8.5(12.0)}{6.0}$$

$$= 17$$

7.



Choose:

- 8.5'
- 16'
- 17.5'
- 20'

Show your work

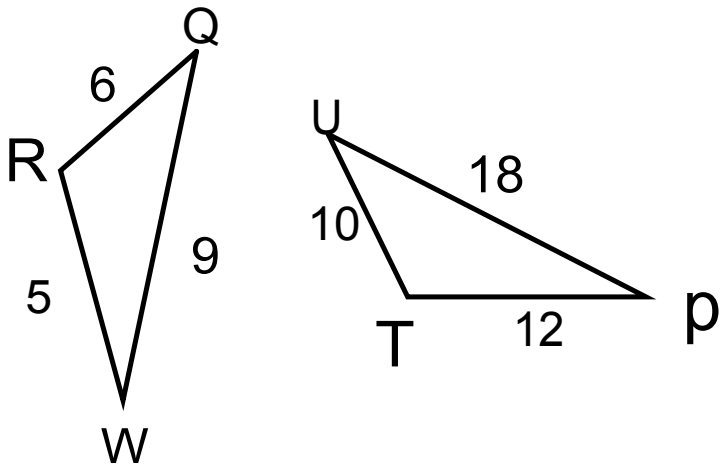
At a certain time of the day, the shadow of a 5' boy is 8' long. The shadow of a tree at this same time is 28' long. How tall is the tree?

Explanation

$\frac{x}{5} = \frac{28}{8}$

$x = \frac{28(5)}{8}$

$= 17.5$



$\triangle RQW \sim \triangle TPU$

Homework

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4) Show all work ab

5) ac

6) a

7)