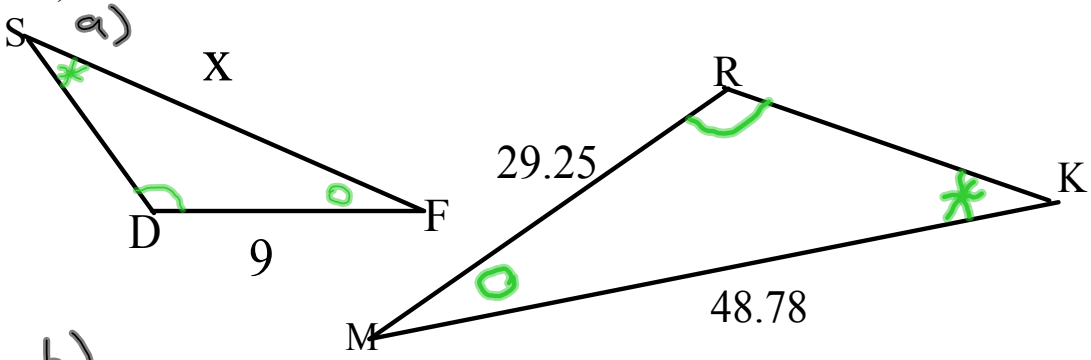
Similar Triangles

Similarity, Ratios and Solving

April 16, 2012

a) Draw a picture
b)Write the Similarity Statement
c) Ratios
d) Fill in ratios
e) solve for "x"



b)

$\triangle SDF \sim \triangle KRM$

c) $\frac{SD}{KR} = \frac{SF}{KM} = \frac{DF}{RM}$

d) $\frac{x}{48.78} = \frac{9}{29.25}$

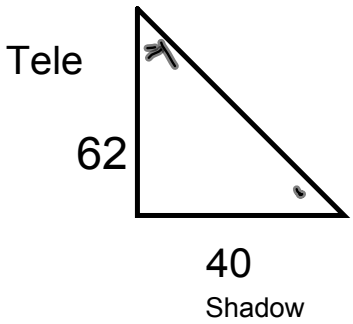
e) cross multiply

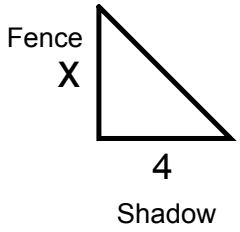
$x = 15$

15.01

Example #1

A telephone pole that is 62 ft tall cast a shadow that is 40 ft long. Find the height of a fence pole that cast a 4 ft shadow.



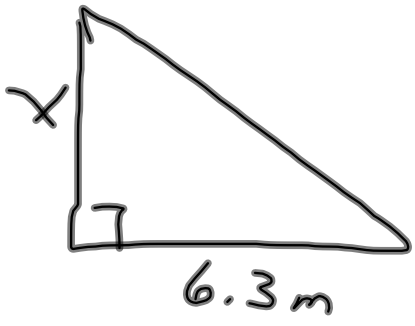


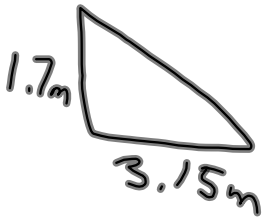
$\frac{4}{40} \times \frac{x}{62}$

$\frac{40x}{40} = \frac{248}{40}$

The height of the fence post is 6.2 $x = 6.2$

380 #2





$\frac{3.15}{6.3} = \frac{1.7}{x}$

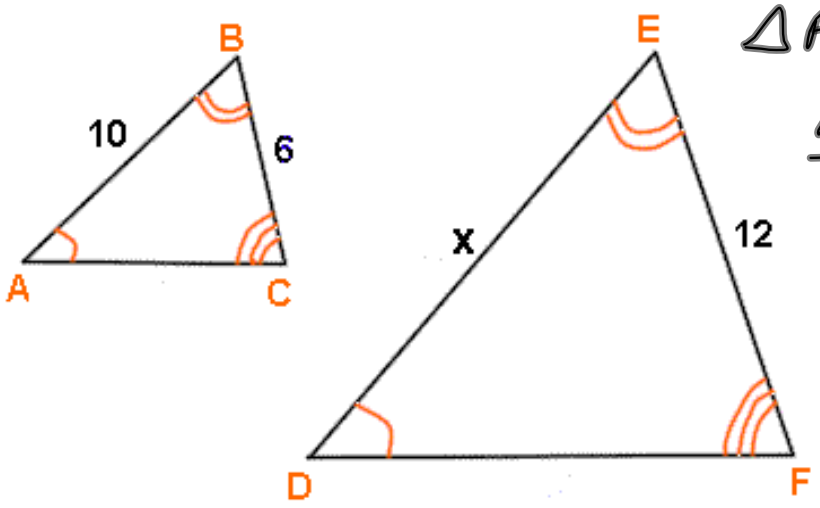
$\frac{3.15x}{3.15} = \frac{10.71}{3.15}$

$x = 3.4m$

1

WHAT YOU HAVE TO INCLUDE ON A TEST

Find x:



$\triangle ABC \sim \triangle DEF$

$\frac{AB}{DE} = \frac{BC}{EF} = \frac{CA}{FD}$

$\frac{10}{x} = \frac{6}{12}$

$\frac{6x}{6} = \frac{120}{6}$

$x = 20$

Draw a picture (done) ✓

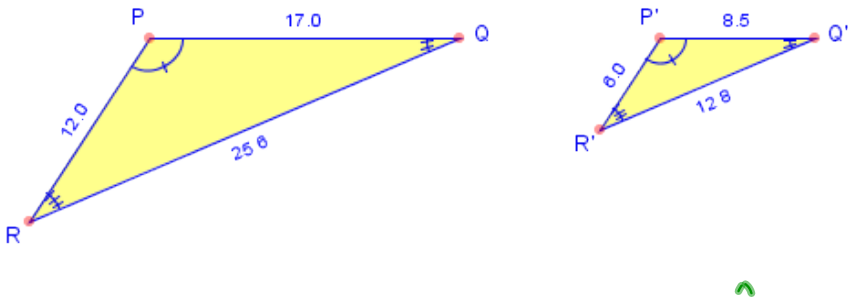
Write the Similarity Statement: ✓

Write the proper ratios: ✓

Fill in the ratios: ✓

Solve:

Solve for x .

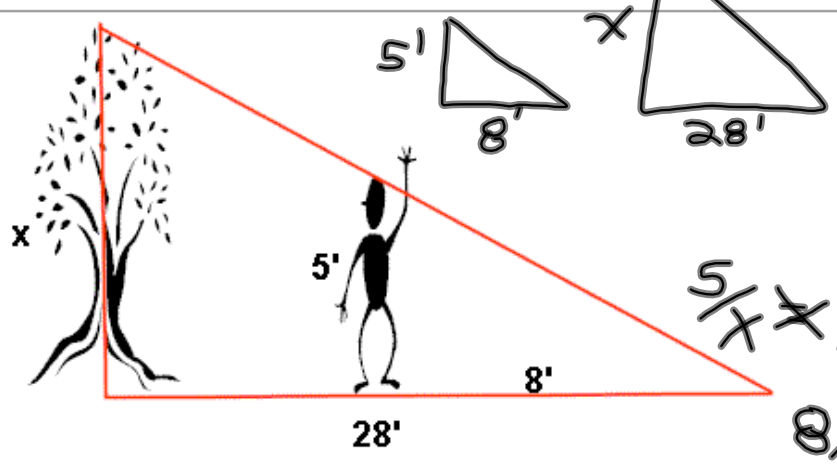


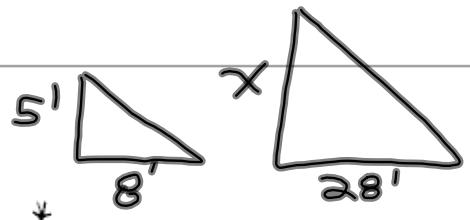
Similarity statement

2 ratios needed

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

7.





Choose:

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

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

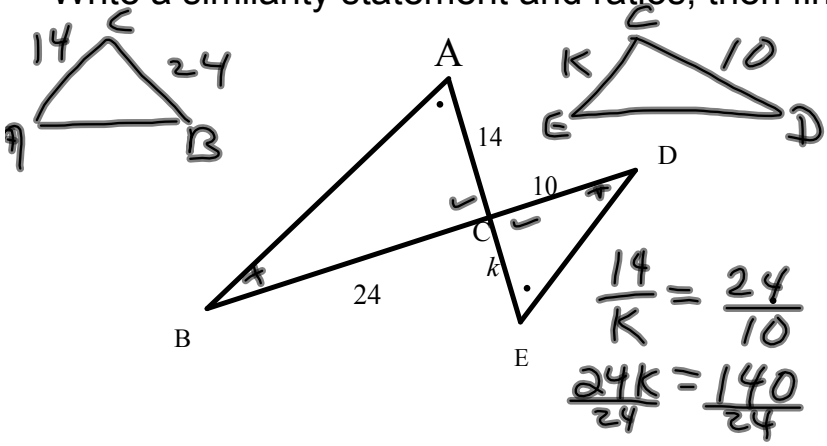
$\frac{8x}{8} = \frac{140}{8}$

$x = 17.5'$

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

Write a similarity statement and ratios, then find "k"



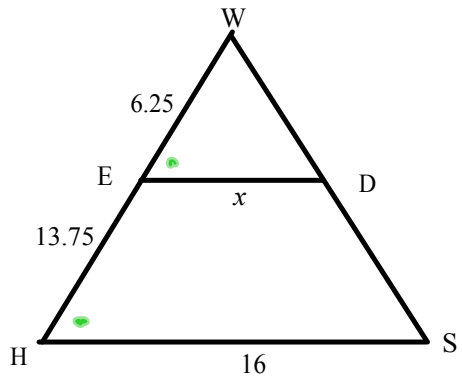
$\Delta ABC \sim \Delta EDC$

$$\frac{AB}{ED} = \frac{BC}{DC} = \frac{AC}{EC}$$

Try This !!

Solve for X

Remember to include a similarity statement



Homework

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7, 9, 10, 11, 12, 14

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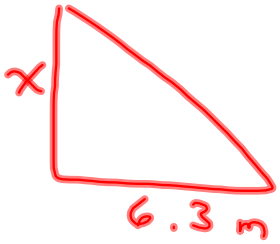
380 #2



$$\frac{3.15}{6.3} \times \frac{1.7}{x}$$

$$\frac{3.15x}{3.15} = \frac{10.71}{3.15}$$

$$x = 3.4\ m$$