

prealg. cindy. mar 26
3:30

Prealgebra 6.9

Solve problems involving indirect measurement (shadow reckoning)

Solve problems using surveying methods

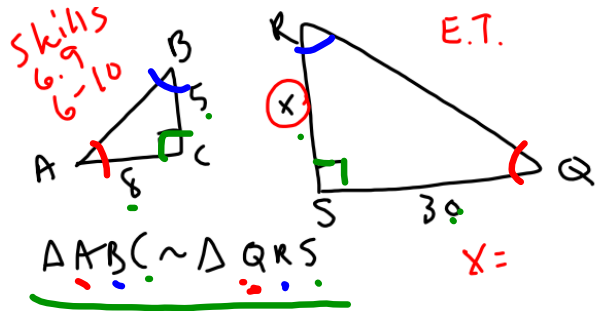
similar triangles

corresponding parts

direct measurement

indirect measurement

surveying



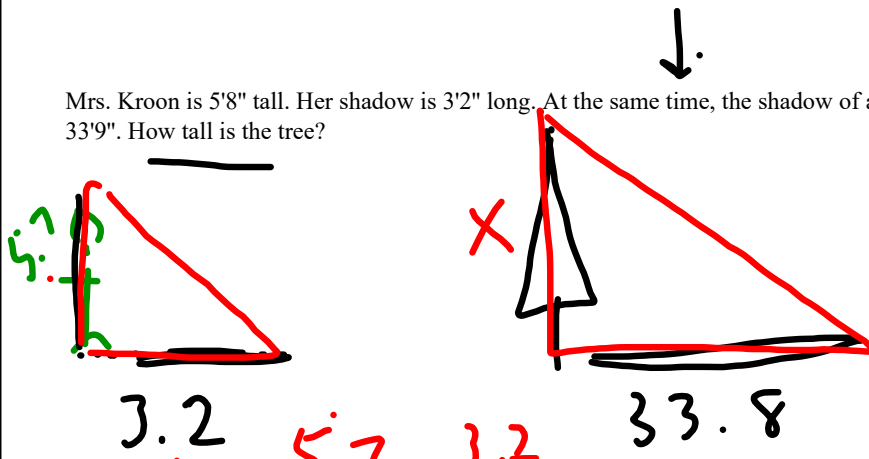
$$\frac{8}{30} = \frac{5}{x} \quad \frac{2x}{4} = \frac{150}{8}$$

$$x = 18.75$$

$$x \approx 19$$

Mar 11-7:17 PM

Mrs. Kroon is 5'8" tall. Her shadow is 3'2" long. At the same time, the shadow of a tree is 33'9". How tall is the tree?



Sketch
Draw triangle
proportion
solve

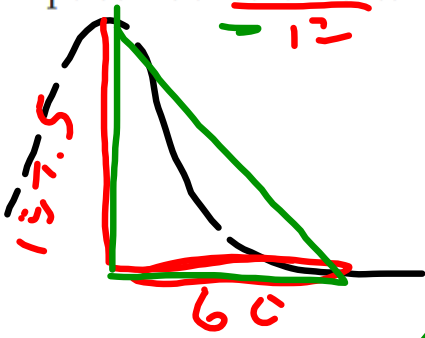
$$\frac{5.7}{x} = \frac{3.2}{33.8} \quad \frac{3.2x}{3.2} = \frac{192.7}{3.2}$$

$$60.2 \text{ ft}$$

$$60' 2''$$

Mar 12-7:02 PM

7 ROLLER COASTERS The height of a roller coaster is 157.5 feet. If the roller coaster's shadow is 60 feet long, how long will a person's shadow be if the person is 5 feet 3 inches tall?



$$\frac{157.5}{5.25} = \frac{60}{x}$$

$$\frac{157.5x}{157.5} = \frac{315}{157.5}$$

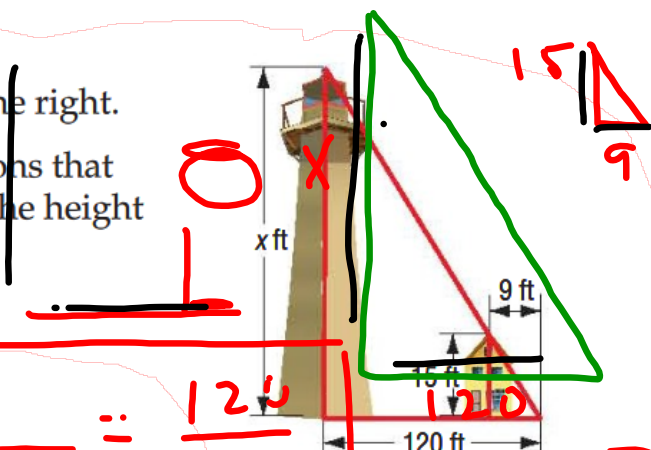
$x = 2$ feet

Mar 1-12:29 PM

LIGHTHOUSE Use the figure at the right.

- a. Write two different proportions that could be used to determine the height of the lighthouse.
- b. How tall is the lighthouse?

Helps to un-overlap the triangles...



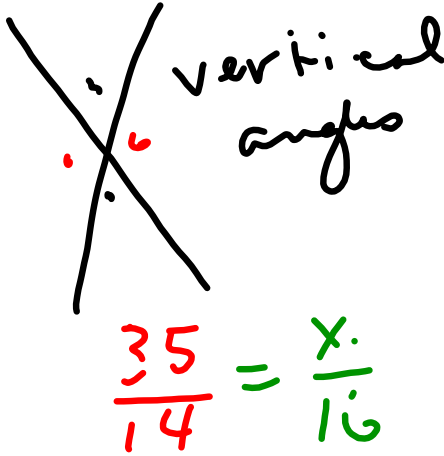
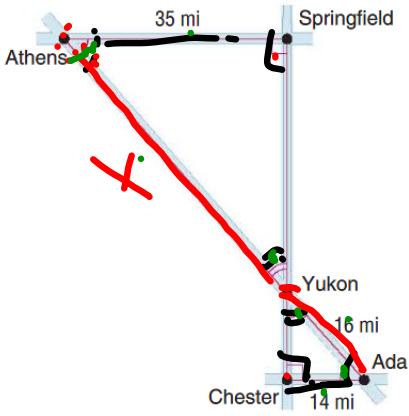
$$\frac{x}{15} = \frac{120}{9}$$

$$9x = 1800$$

$$x = 200 \text{ ft}$$

Mar 1-12:30 PM

6. **MAPS** The triangles below are similar. How far is it from Athens to Yukon?



Mar 1-12:26 PM

4. **TREE HOUSE** A tree house casts a shadow of 18 feet while Jenet casts a shadow 9 feet. If Jenet is 5 feet tall, how tall is the tree house?

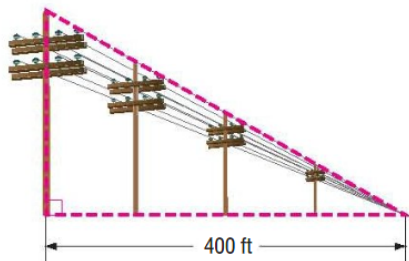
ET

WB practice 6.9 1-5 900 PM. Fkj

Mar 1-12:31 PM

Needs separate triangles

10. **POLES** Electrical poles that carry electrical wire seem to get smaller the farther away they are. Find the apparent height of each pole if the tallest pole is 50 feet tall and there is 100 feet between each pole.



Mar 1-12:30 PM

Mar 7-4:01 PM