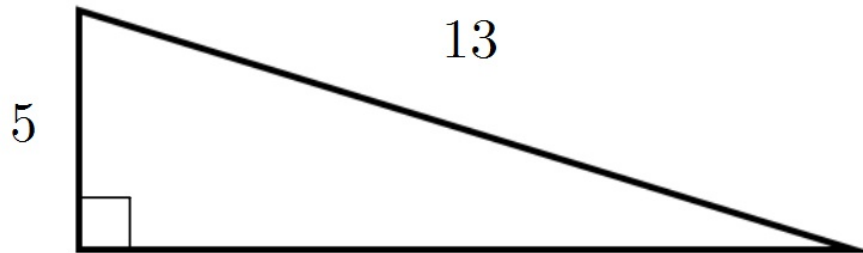


Good afternoon and welcome back! Warm up in notebooks please:

Find the perimeter of the triangle:



WILL NEED
TEXTBOOK
TODAY

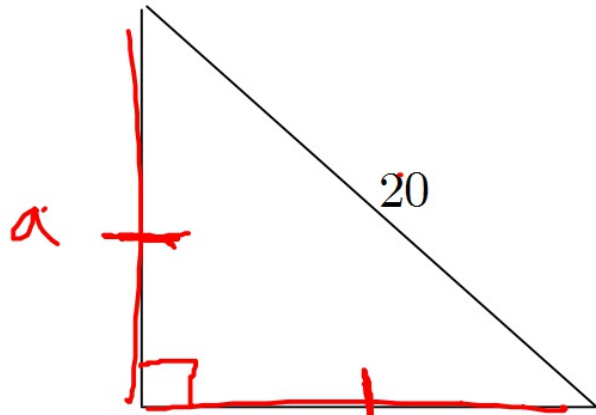
answer: 30



Warm up #2



Find the perimeter!

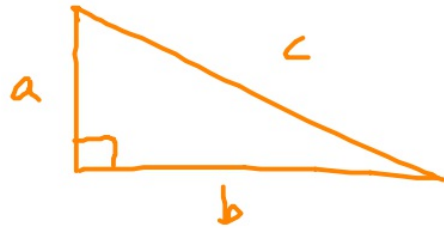


$$a^2 + a^2 = 20^2$$

$$2a^2 = 400$$

$$\sqrt{a^2} = \sqrt{200}$$

$$a \approx 14.14$$



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

$$48.28$$



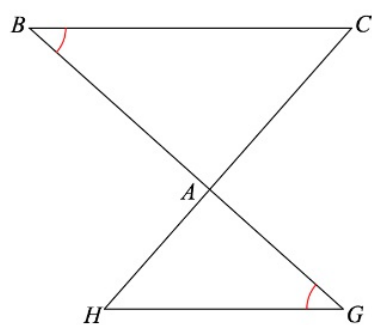
Tutoring Change!!!

~~Tuesday afternoon~~

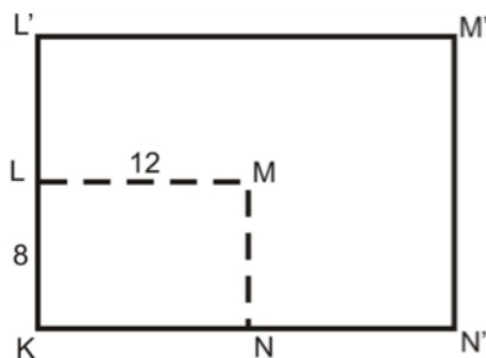
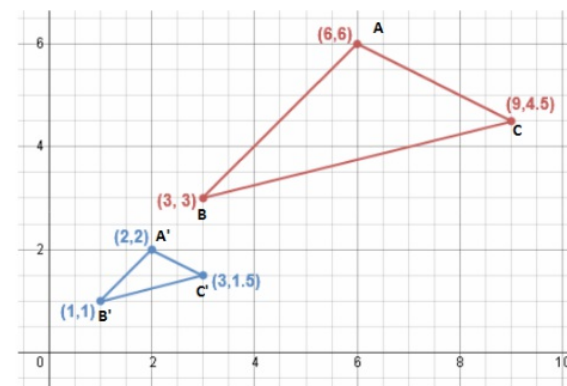
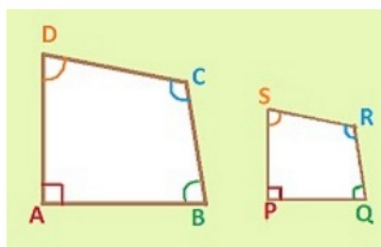
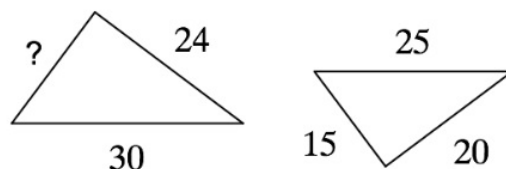
Wednesday afternoon



What do you remember about similarity and similar triangles? Think.



$\triangle ABC \sim$ _____

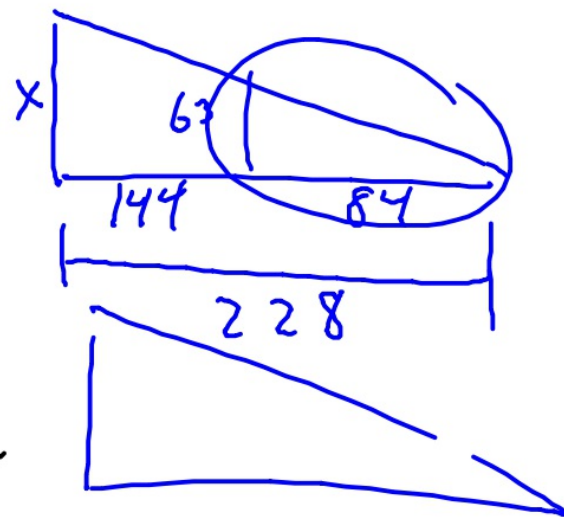
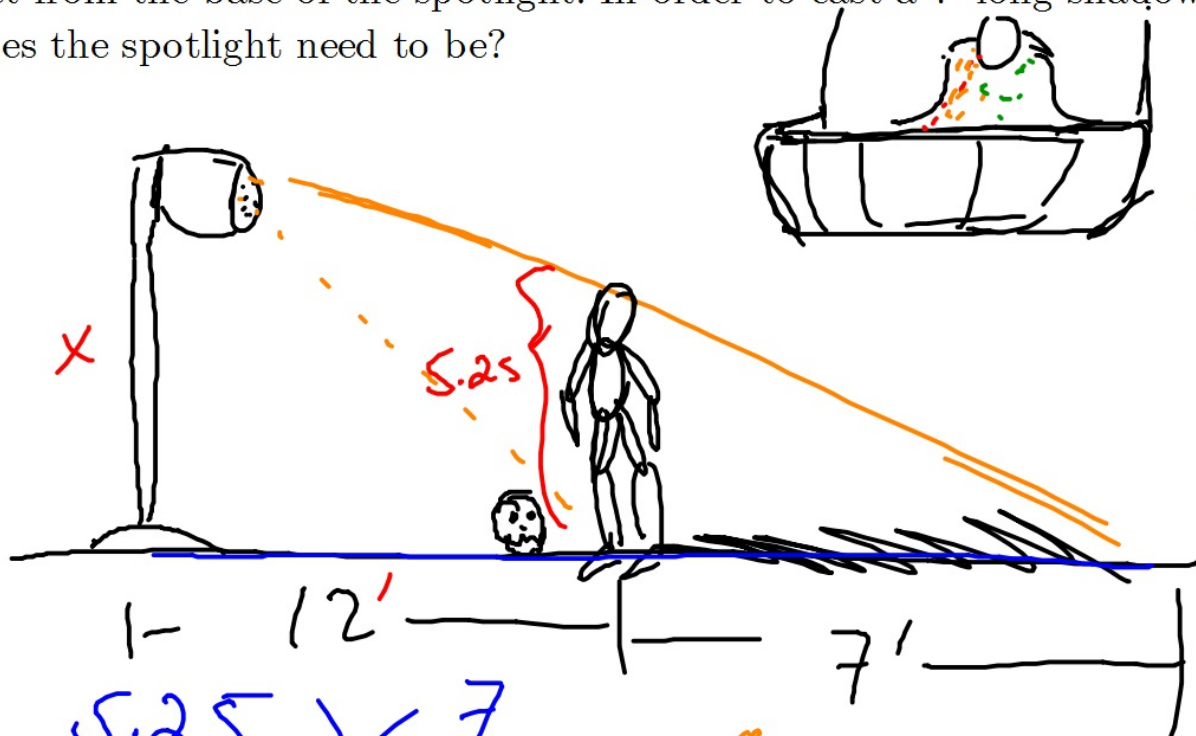


Indirect Measurement

(NOTES)

$$3/12 = 1/4$$

A spotlight is being used to highlight an actor on stage. The 5'3" tall actor is standing 12 feet from the base of the spotlight. In order to cast a 7' long shadow, how high above the ground does the spotlight need to be?



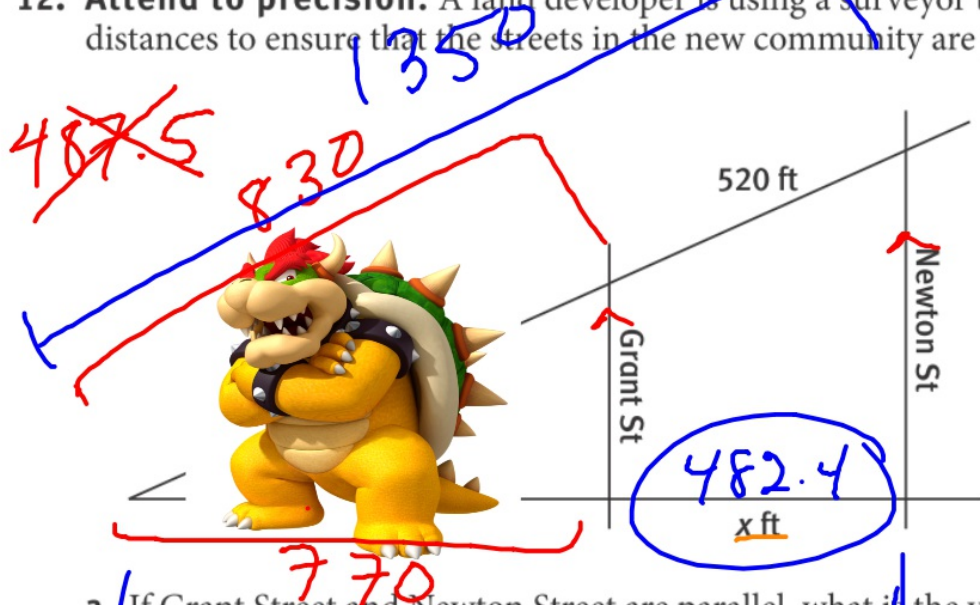
$$\frac{5.25}{x} = \frac{7}{19}$$

$$\frac{a}{b} = \frac{c}{d} \rightarrow \frac{ad}{\cancel{b}} = \frac{\cancel{b}c}{\cancel{d}}$$

answer: 14.25 feet or 14'3"

Proportions, Parallels, and Triangles: p. 269 #12

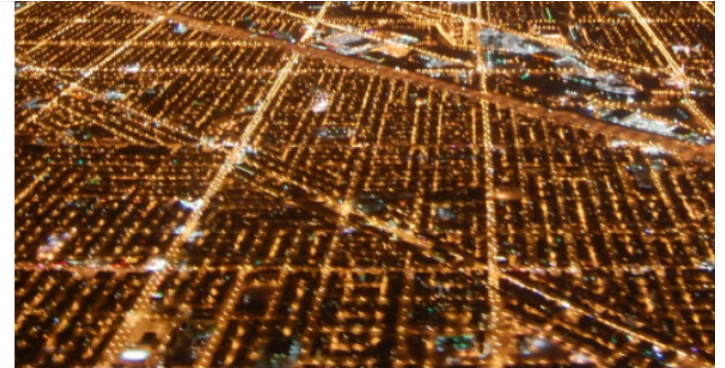
12. **Attend to precision.** A land developer is using a surveyor to measure distances to ensure that the streets in the new community are parallel.



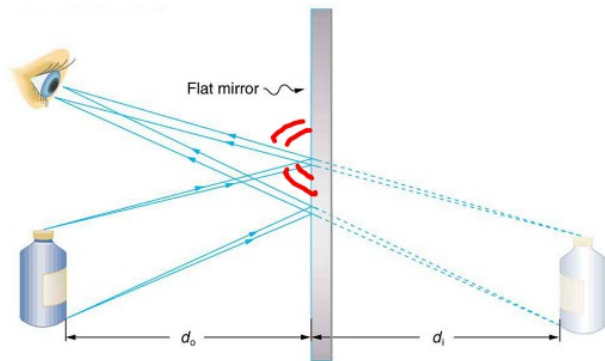
a. ~~If Grant Street and Newton Street are parallel, what is the value of x ?~~
Support your answer.

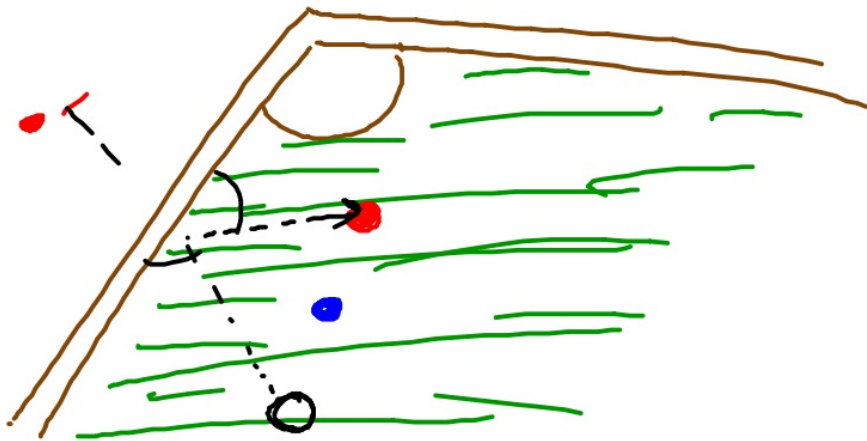
$$\frac{830}{770} = \frac{1350}{y} = 1252.4$$

~~b. Are Smith Street and Grant Street parallel? Support your answer.~~



Angle of Incidence/Angle of Reflection

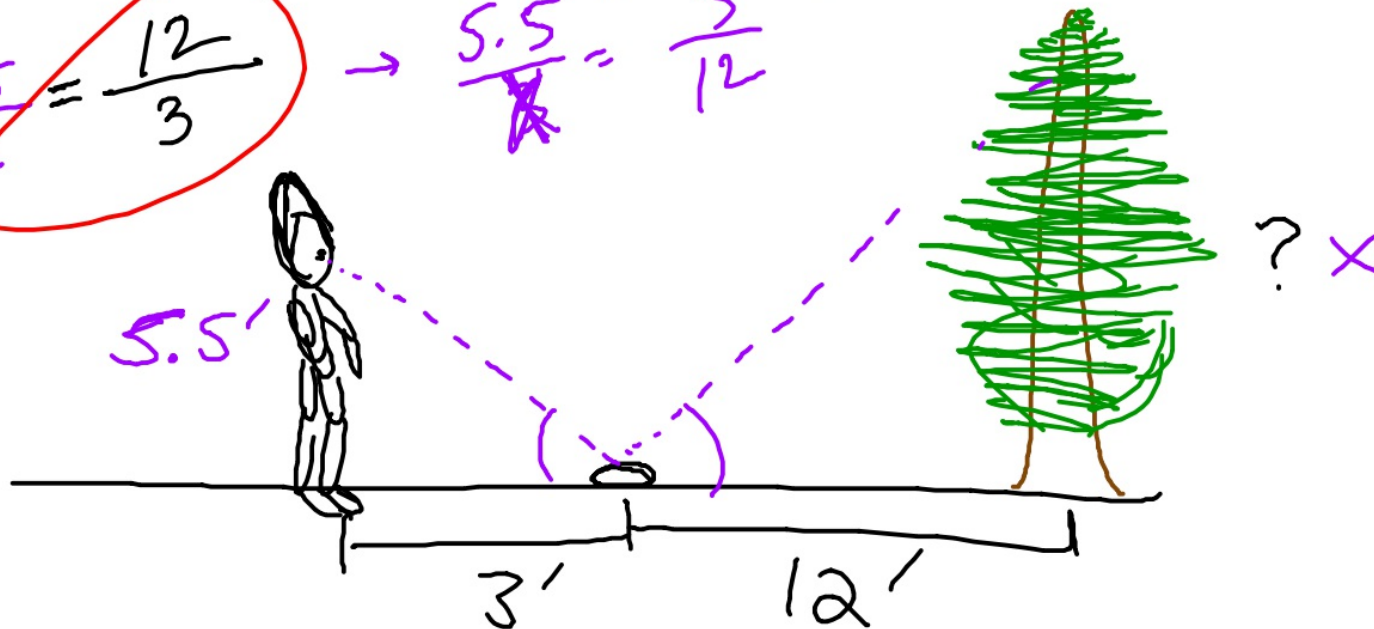




A mirror is laid flat on the ground 12 feet from the base of a Douglas Fir. When a particular student stands 3 feet behind the mirror, she can see the top of the tree in the mirror. If the student's eye-height is 5'6", how tall is the fir?

$$\frac{5.5}{x} = \frac{12}{3}$$

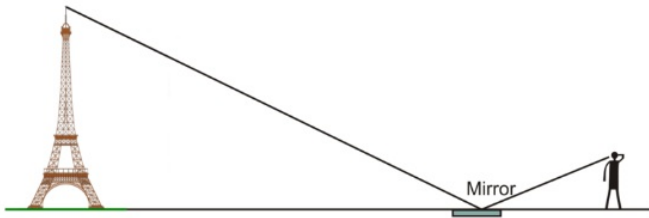
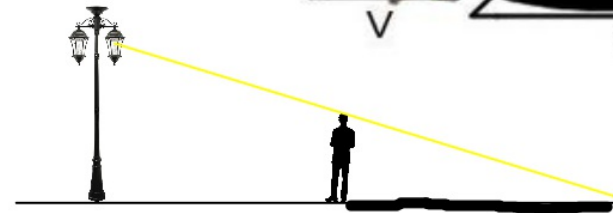
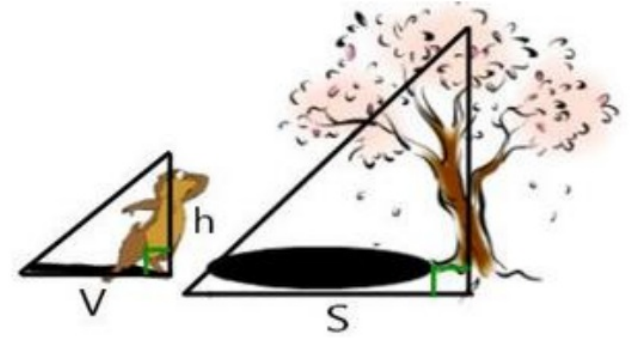
$$\rightarrow \frac{5.5}{x} = \frac{3}{12}$$



answer: 22 feet

Indirect measurement problem types:

- Sunlight shadows: two separate triangles
- Artificial light shadows: overlapping triangles
- Reflected image: facing triangles



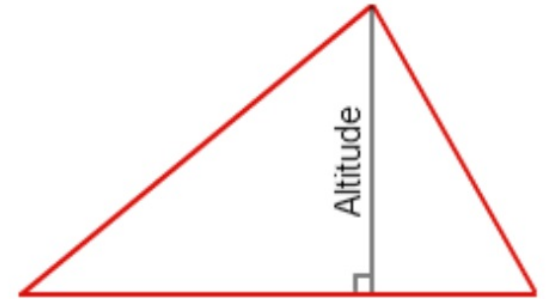
Similarity Within Right Triangles

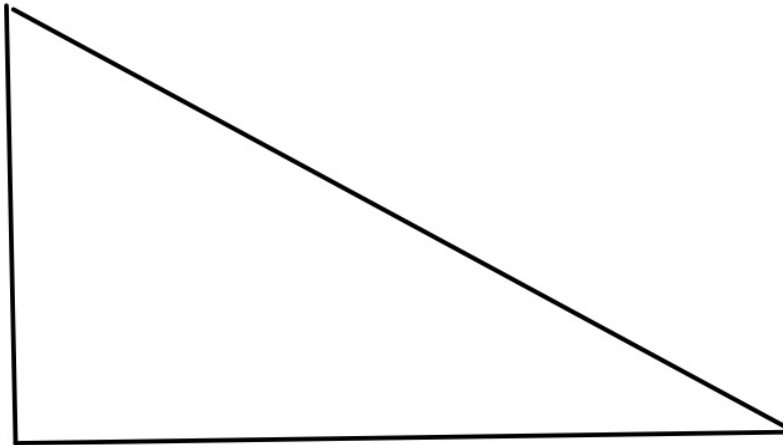
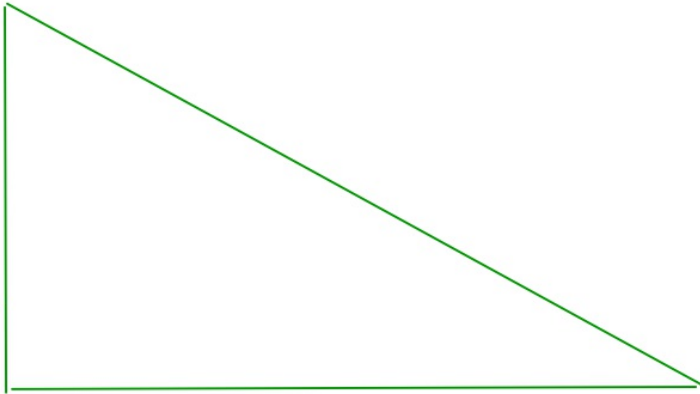
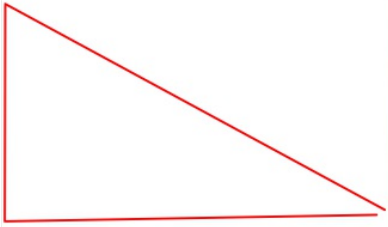
1. Create 2 congruent right triangles using all of the construction paper.

2. Using one of the triangles, fold to create an altitude that connects the right angle to the hypotenuse. Think about how you know its an altitude.

3. Cut along this altitude. You should now have 3 triangles.

4. Play around with the 3 triangles and make a conjecture about their relationship. Can you prove anything about them?





They're all similar to each other!

AA~



hw:

p. 272 #7, 12, 13

p. 281 #1, 2