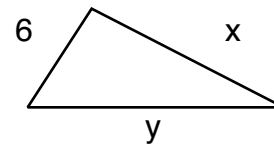
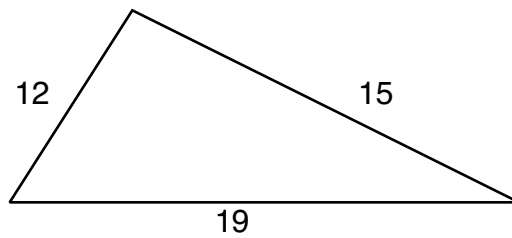


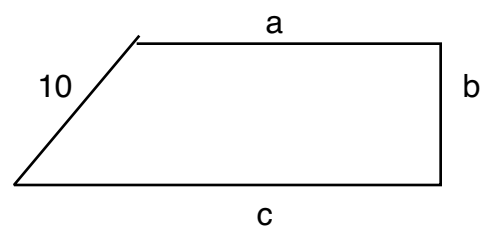
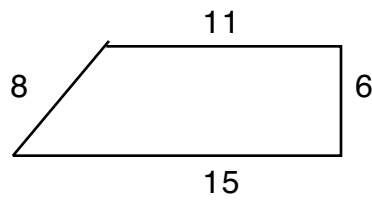
In each of the pairs of figures below, assume the figures are similar and that they are facing the same way; that is, assume that the left side of one corresponds to the left side of the other, etc. In each case, do the following:

- Set up equations to find the lengths of the sides labeled by variables, and
- Find answers to the equations.

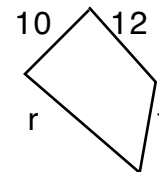
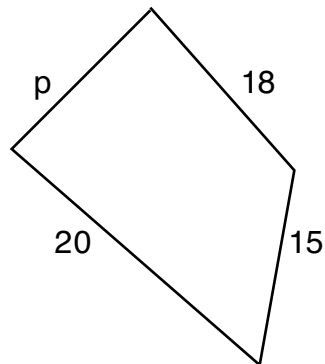
1.



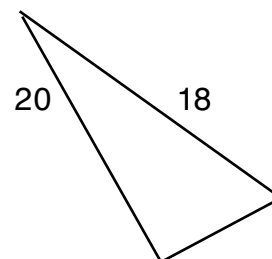
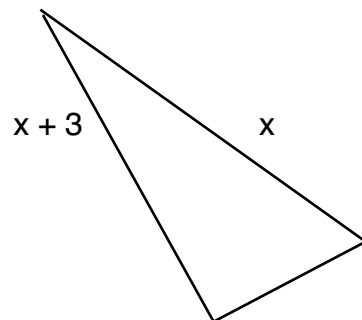
2.



3.



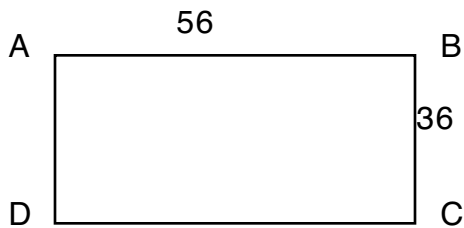
4.



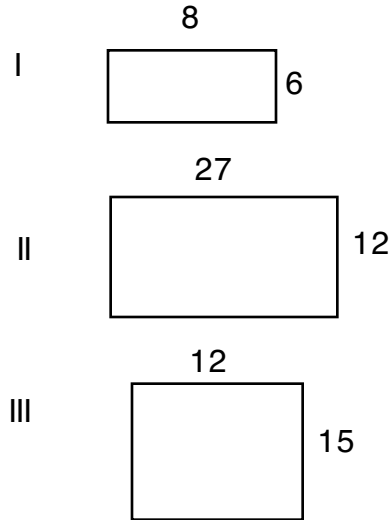
Quiz: Similar Polygons
After Day 10

1. From 1891 to 1928 the dollar bill measured $7\frac{5}{16}$ inches by $3\frac{1}{8}$ inches. The dimensions of the current dollar bill are $6\frac{1}{8}$ inches by $2\frac{3}{8}$ inches. Are the two dollar bills similar? Show your work and explain your answer.

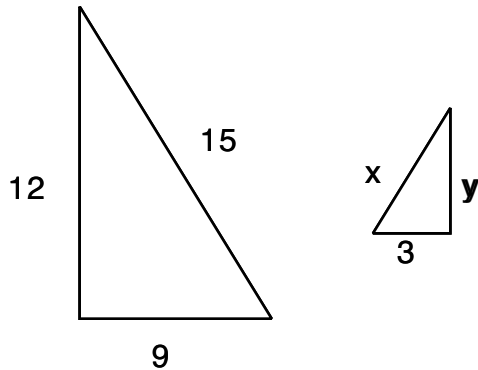
2. Which of the following rectangles are similar to rectangle ABCD?



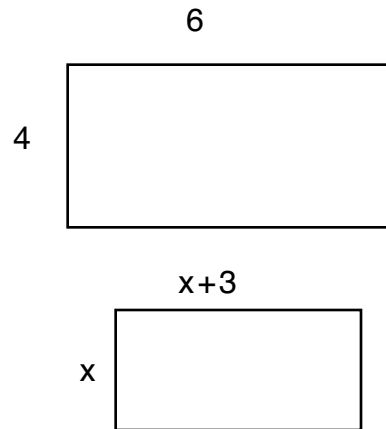
- a) I only
- b) II only
- c) III only
- d) I & III only
- e) I, II, and III



3. The two figures below are similar. Find x and y .

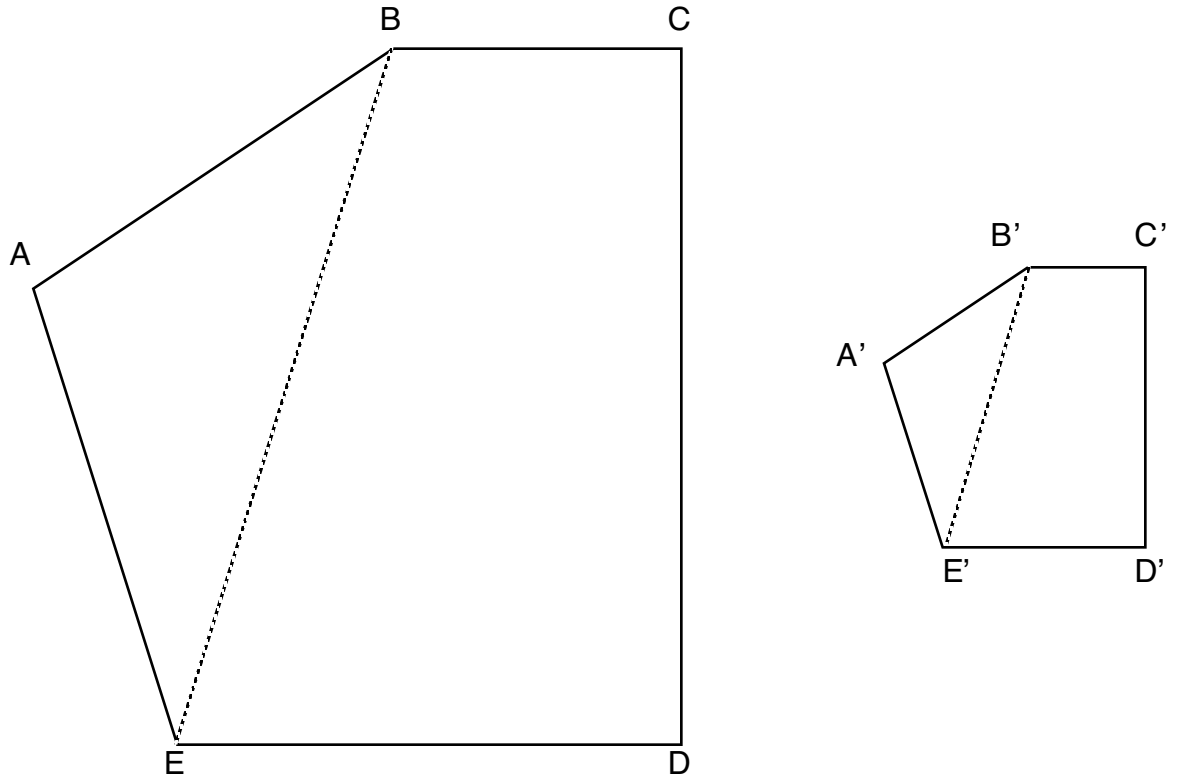


4. The two figures below are similar. Find x and y .



HOMEWORK 11 FIND THE RATIOS

Find the ratio between the length of each side of the large figure and the corresponding side of the small figure.



length of side AB _____	length of side A'B' _____	Ratio _____
length of side BC _____	length of side B'C' _____	Ratio _____
length of side CD _____	length of side C'D' _____	Ratio _____
length of side DE _____	length of side D'E' _____	Ratio _____
length of side AE _____	length of side A'E' _____	Ratio _____

2. Measure the perimeters and find the ratio of the perimeters. _____
3. Measure the given diagonals and find the ratio of the diagonals. _____
4. What do you think would be the ratio of diagonals AD and A'D'? _____

Properties of Proportions - Worksheet
SHADOWS Day 13

Solve for the unknown variable:

1. $\frac{x}{8} = \frac{12}{18}$

6. $\frac{1}{2} = \frac{z}{25}$

2. $\frac{x}{12} = \frac{60}{45}$

7. $\frac{3x}{21} = \frac{5}{3}$

3. $\frac{c}{6} = \frac{12}{15}$

8. $\frac{x}{9} = \frac{16}{x}$

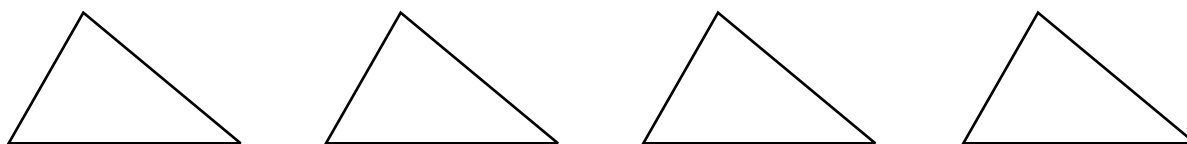
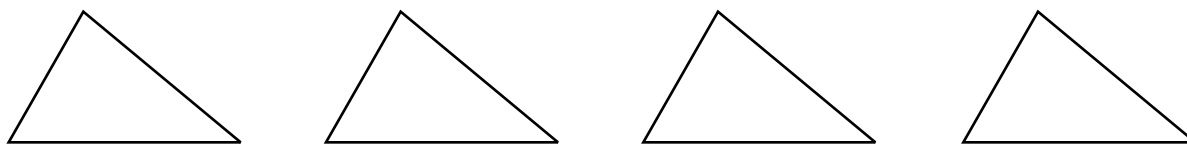
4. $\frac{q}{56} = \frac{15}{14}$

9. $\frac{9}{12} = \frac{x-1}{4}$

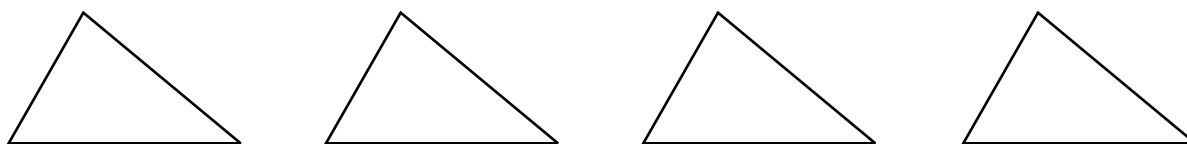
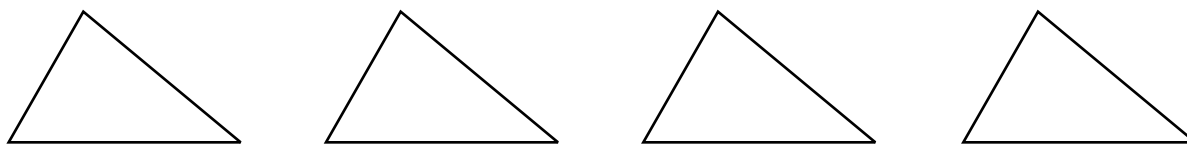
5. $\frac{8}{d} = \frac{40}{30}$

10. $\frac{x}{x+6} = \frac{1}{2}$

Practice sheet for Homework 15
SHADOWS Day 15



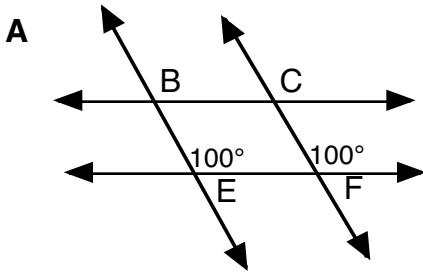
Practice sheet for Homework 15
SHADOWS Day 15

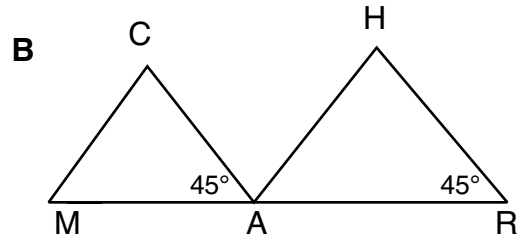


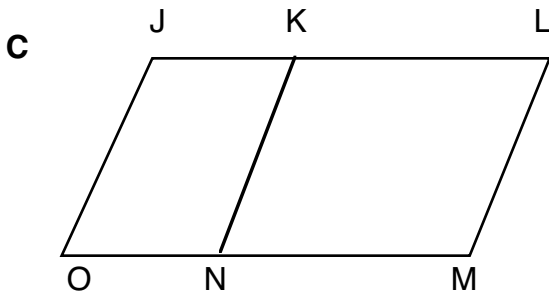
WORKSHEET PARALLEL LINES

AFTER DAY 15

Part 1: Which lines or segments are parallel?

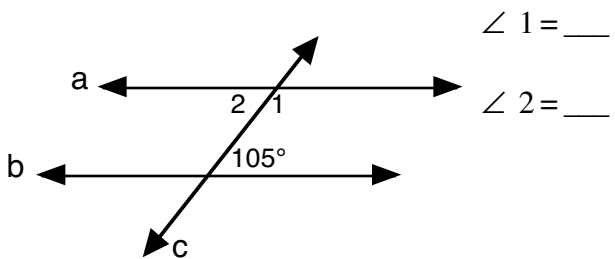
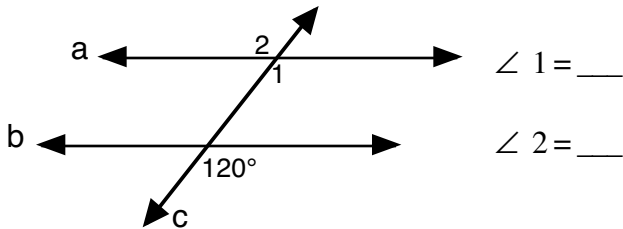




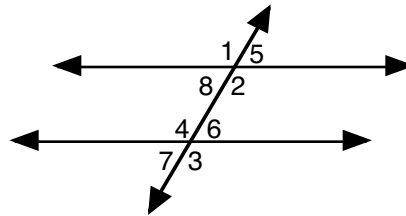


_____ $\angle J + \angle L = 180^\circ$

Part 3 In each of the following, lines a and b are parallel. Find $\angle 1$ and $\angle 2$.



Part 2 Classify each pair of angles as
 alternate interior angles
 corresponding angles
 same-side interior angles
 alternate exterior angles
 same-side exterior angles



$\angle 1$ and $\angle 3$ _____

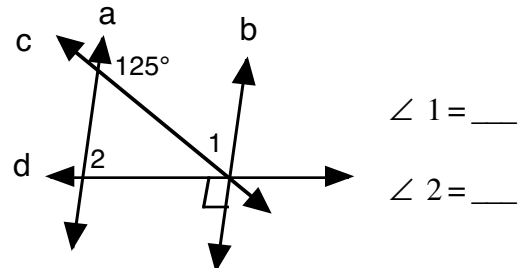
$\angle 4$ and $\angle 2$ _____

$\angle 7$ and $\angle 1$ _____

$\angle 5$ and $\angle 7$ _____

$\angle 6$ and $\angle 5$ _____

$\angle 8$ and $\angle 4$ _____



Parallel Lines & Angles - Quiz
SHADOWS after DAY 15

Given that $a \parallel b$

$\angle 1$ and $\angle 3$ _____

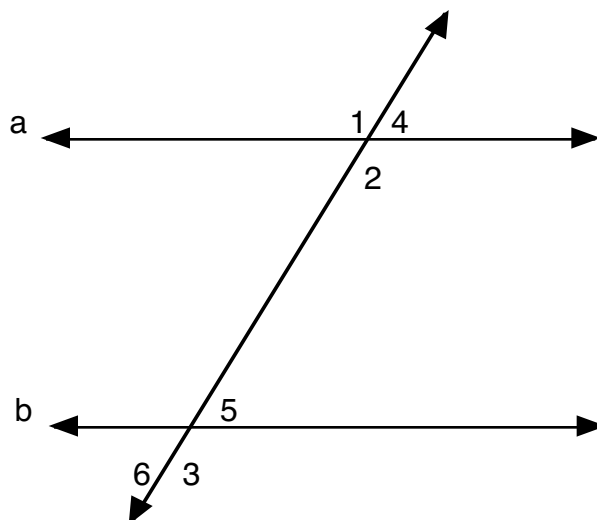
$\angle 4$ and $\angle 5$ _____

$\angle 1$ and $\angle 6$ _____

$\angle 6$ and $\angle 4$ _____

$\angle 2$ and $\angle 3$ _____

$\angle 3$ and $\angle 4$ _____



Classify (as alternate-interior, etc.) each pair of angles with respect to the above diagram. Then state whether the angles are **supplementary** or **congruent**.

Parallel Lines & Angles - Quiz
SHADOWS after DAY 15

Given that $a \parallel b$

$\angle 1$ and $\angle 3$ _____

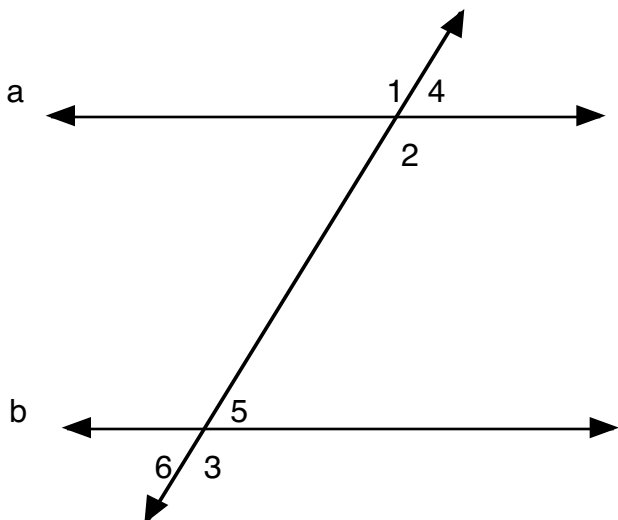
$\angle 4$ and $\angle 5$ _____

$\angle 1$ and $\angle 6$ _____

$\angle 6$ and $\angle 4$ _____

$\angle 2$ and $\angle 3$ _____

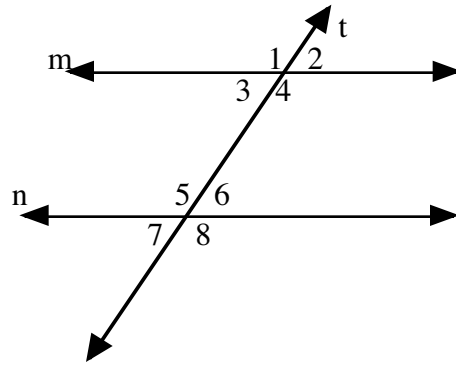
$\angle 3$ and $\angle 4$ _____



Classify (as alternate-interior, corresponding, etc.) each pair of angles with respect to the above diagram. Then state whether the angles are **supplementary** or **congruent**.

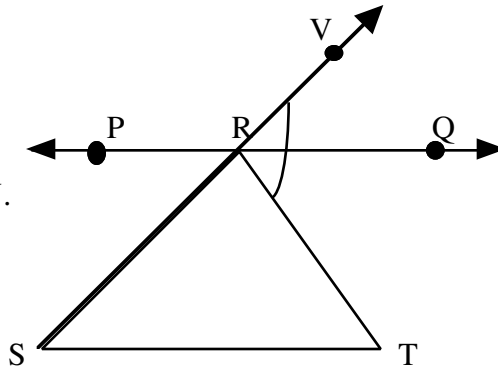
Shadows Quiz: Informal Proof

In the drawing at the right, m , n and t is a transversal. You already know that corresponding angles and alternate interior angles are equal when parallel lines are cut by a transversal. Prove that alternate exterior angles are equal (i.e., $\angle 1 = \angle 8$ or $\angle 2 = \angle 7$).



Shadows Quiz: Informal Proof

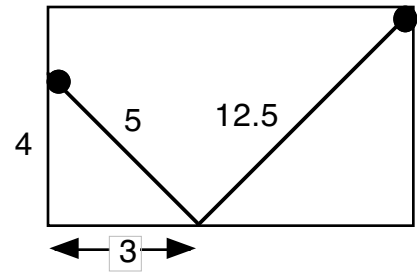
In the drawing at the right, you are given $\triangle RST$. Line PQ passes through R , parallel to line ST . Side RS of $\triangle RST$ has been extended through V . $\angle VRT$ is called an exterior angle. Prove that $\angle VRT = \angle S + \angle T$



Proportions - Quiz
SHADOWS after DAY 19

If a ball located against the rail 4 feet from the long side of a pool table is banked off the long side 3 feet from the lower left corner, it travels 5 feet to the long side of the table, then another 12.5 feet to the corner pocket.

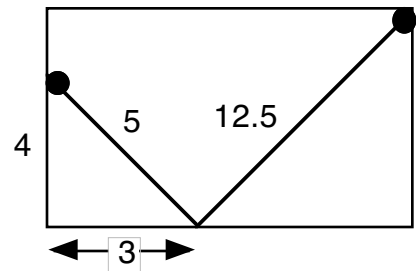
**What is the perimeter of the pool table playing surface?
SHOW ALL WORK AND EXPLAIN!**



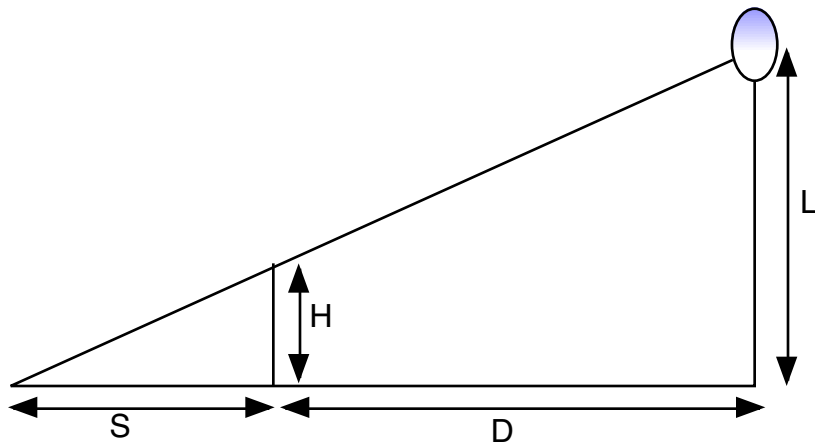
Proportions - Quiz
SHADOWS after DAY 19

If a ball located against the rail 4 feet from the long side of a pool table is banked off the long side 3 feet from the lower left corner, it travels 5 feet to the long side of the table, then another 12.5 feet to the corner pocket.

**What is the perimeter of the pool table playing surface?
SHOW ALL WORK AND EXPLAIN!**



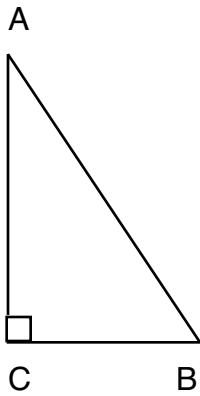
Homework 21



Using the figure above find the missing variable for each problem below.

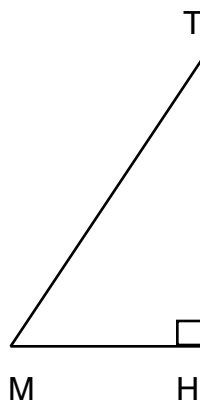
- 1) Find the length of the shadow if the height of the object is 12 feet, the distance the object is from the light is 20 feet, and the height of the light is 15 feet.
- 2) Find the height of the object if the length of the shadow is 10 feet, the distance the object is from the light is 50 feet, and the height of the light is 20 feet.
- 3) Find the distance the object is from the light if the length of the shadow is 12 feet, the height of the object is 6 feet, and the height of the light is 15 feet.
- 4) Find the height of the light if the length of the shadow is 20 feet, the height of the object is 5 feet, and the distance from the object to the light is 14 feet.

TRIANGLE TRIGONOMETRY
AFTER DAY 21 OF SHADOWS

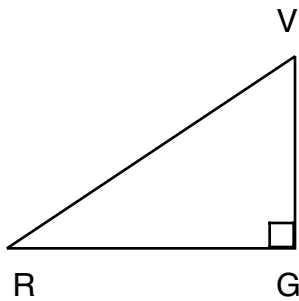


Find all lengths to nearest tenth.

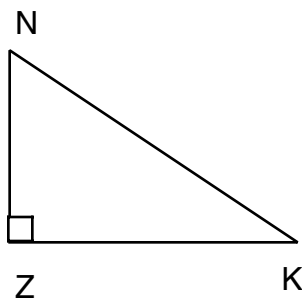
- $AB = 12$, $\angle B = 50^\circ$, $AC = \underline{\hspace{1cm}}$ $BC = \underline{\hspace{1cm}}$
- $BC = 8$, $\angle A = 43^\circ$, $AC = \underline{\hspace{1cm}}$ $AB = \underline{\hspace{1cm}}$



- $HT = 5$, $\angle M = 67^\circ$, $MT = \underline{\hspace{1cm}}$ $HM = \underline{\hspace{1cm}}$
- $MT = 13$, $\angle T = 21^\circ$, $HT = \underline{\hspace{1cm}}$ $HM = \underline{\hspace{1cm}}$



- $VR = 9$, $\angle V = 74^\circ$, $GR = \underline{\hspace{1cm}}$ $GV = \underline{\hspace{1cm}}$
- $GR = 26$, $\angle R = 13^\circ$, $RV = \underline{\hspace{1cm}}$ $GV = \underline{\hspace{1cm}}$



- $NZ = 17$, $\angle N = 79^\circ$, $KZ = \underline{\hspace{1cm}}$ $KN = \underline{\hspace{1cm}}$
- $KZ = 4$, $\angle K = 60^\circ$, $NZ = \underline{\hspace{1cm}}$ $KN = \underline{\hspace{1cm}}$

After Day 21 - Shadows

For each problem, make a right triangular drawing labeled correctly with the given information and a variable for what you are trying to find. FORM A TRIG EQUATION, using sin, cos, or tan; THEN, write an equation that would find your variable. Using a calculator, find the solution to the question.

1. When the angle of elevation of the sun is 40 degrees, a building casts a shadow of 800 feet. How tall is the building?

2. How far up a vertical wall does a 12 foot ladder reach if the angle it makes with the ground is 75 degrees?

3. The operator of a lighthouse spots a sailboat on a line that makes an 8 degree angle with the horizontal. If the top of the lighthouse is 25 meters above sea level, the sailboat is how far away from the base of the lighthouse?

4. A support cable for a 50 ft. tower is to make a 60 degree angle with the ground. How long must the cable be? (The cable goes to the top of the tower).