Name: _____

6.6.D2 – Application of Similar Triangles

Past due on: _____ Period: _____

For each problem situation, set up and solve a proportion.

1. Zoe and Ramon are hiking on a glacier. They become separated by a crevasse running east to west. East person stands 9 feet from the edge. Then, Zoe walks 48 feet east, and Ramon walks 12 feet west. What is the width of the crevasse?

48 ft
9 ft
9 ft
12 ft
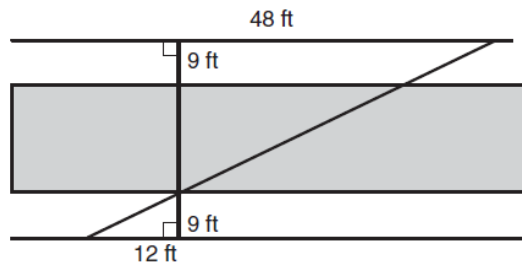
2. Dimitri wants to measure the height of a palm tree. He lines himself up with the palm tree's shadow so that the tip of his shadow meets the top of the palm tree's shadow. Then, he asks a friend to measure the distance from where he was standing to the tip of his shadow and the distance from the palm tree to the tip of its shadow. What is the height of the palm tree?

Dimitri
6 ft
45 ft
11.25 ft
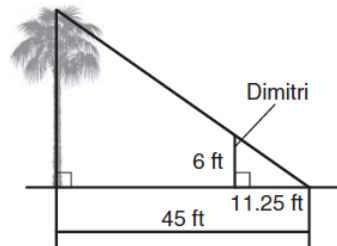
3. Shira finds a tidal pool while walking on the beach. She wants to know the maximum width of the tidal pool. Using indirect measurement, she begins by marking the points A, C, & E. Shira measures the distances shown on the image. Next, Shira marks point B along AC and point D along AE, such that BD is parallel to CE. What is the distance across the tidal pool at its widest point?

A
7 ft
B   D
3 ft
31.5 ft
C
E
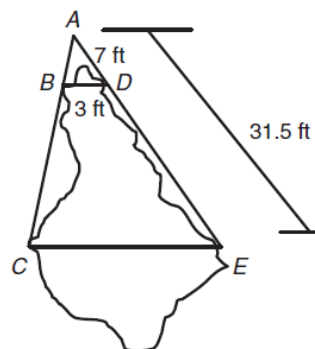
4. Micah wants to know the height of his school. He places a small mirror on the ground between himself and the school, then he backs up until he can see the highest point of the school in the mirror. What is the height of Micah's school?
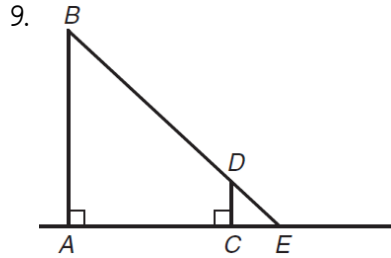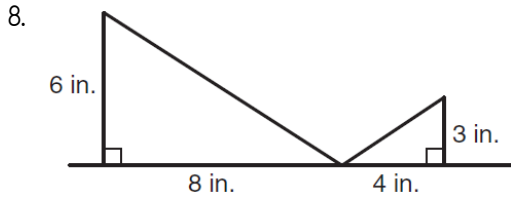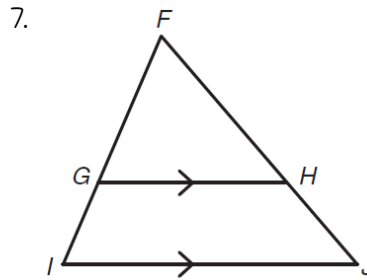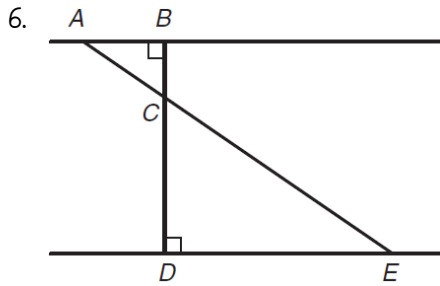
x
6 ft
93.5 ft
12.75 ft
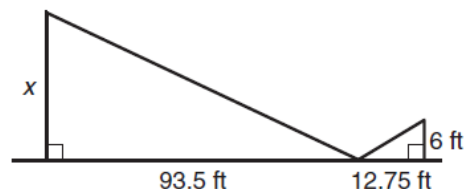
5. You and a friend are on the 10th floor of apartment buildings that are directly across the street from each other, and have balconies. The two of you are making a banner to hang between the apartment buildings. The banner must cross the street. To hang the banner, you and your friend need to attach it to hooks on the wall of each balcony. The wall of your balcony is 6 feet away from the street and the wall of your friend's balcony is 4 feet away from the street. You also know that your friend's balcony is 10 feet away from the end of his building and your balcony is 100 feet away from the edge of your building. How wide is the street between you and your friend's apartment building? How long does the banner need to be?
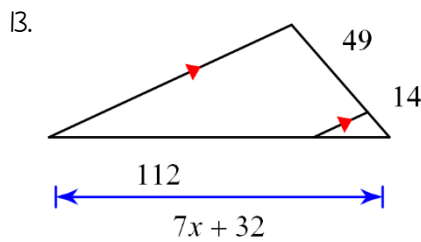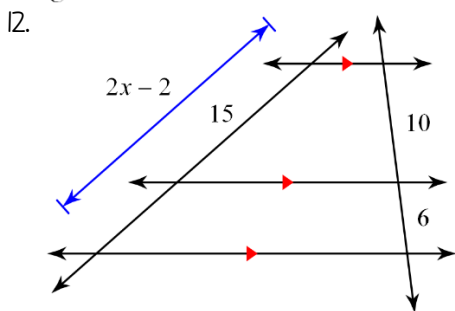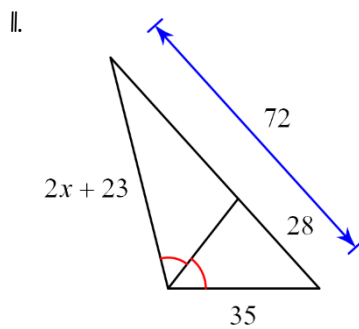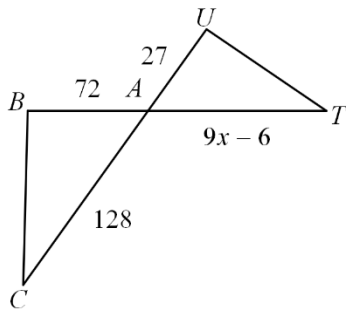
10 ft
4 ft
6 ft
100 ft
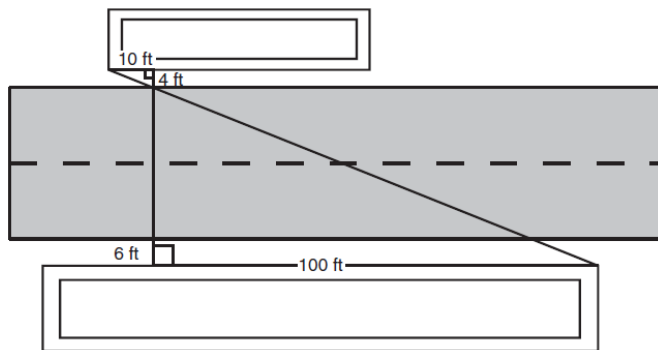
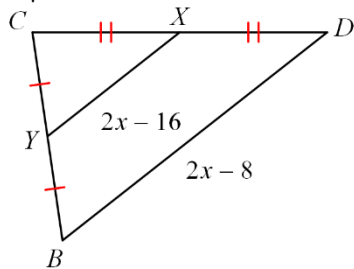Review:

Explain how you know that each pair of triangles are similar.

6.

7.

8.

6 in.
8 in.
3 in.
4 in.

9.

Set up and solve a proportion to find the value of x.

10. $\triangle ABC \sim \triangle AUT$

U
27
72 A
B
T
$9x - 6$
128
C

11.

72
$2x + 23$
28
35

12.

$2x - 2$
15
10
6

13.

49
14
112
$7x + 32$

14. Use the Midsegment Theorem to set up and solve an equation to find the value of x. Then find XY.

C X D
Y
$2x - 16$
$2x - 8$
B

15. Use similar right triangle relationships to find the value of the variables. If necessary, express as a radical in simplest form.

K
4
H
5
y
A
x
z
T

Chapter 6: Similarity Through Transformations