Review
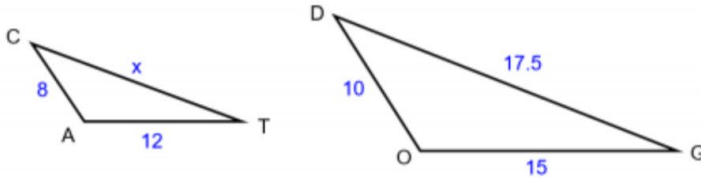
NAME:_____

DATE:_____

The following figures are similar. Fill in the blanks and answer the questions.

1.

CAT ~ **DOG**

a. Find x. $\frac{x}{17.5} = \frac{8}{10}$ **x = 14**

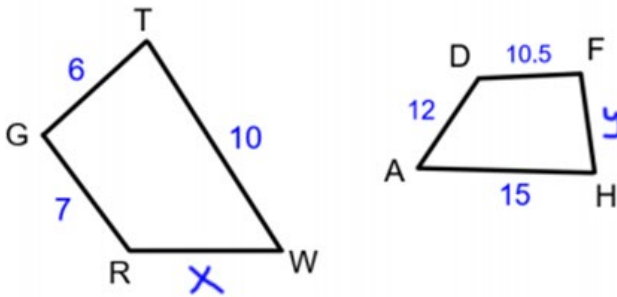b. $\overline{AT}$ corresponds to **$\overline{OG}$**

c. $\angle D$ corresponds to **$\angle C$**

d. What is the scale factor?

$$\frac{4}{5} \quad or \quad \frac{5}{4}$$

2.

GRWT ~ **FDAH**

a. $\overline{GT}$ corresponds to **$\overline{FH}$**

b. $\angle A$ corresponds to **$\angle W$**

c. $\frac{WT}{AH} = \frac{GT}{FH}$ is true or false? **True**

d. What is the scale factor?

$$\frac{2}{3} \quad or \quad \frac{3}{2}$$

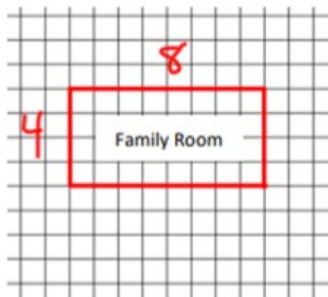e. Find the length of WR.

$\frac{x}{12} = \frac{7}{10.5}$ **WR = 8**

f. Find the length of FH.

$\frac{y}{6} = \frac{15}{10}$ **FH = 9**

3. The scale is 2 units = 13 feet.

a. What are the real-life dimensions of the family room?

$\frac{2}{13} = \frac{4}{x}$ $\frac{2}{13} = \frac{8}{y}$
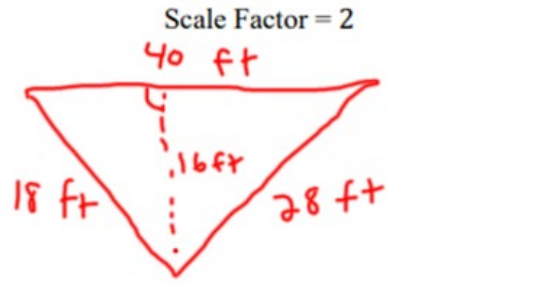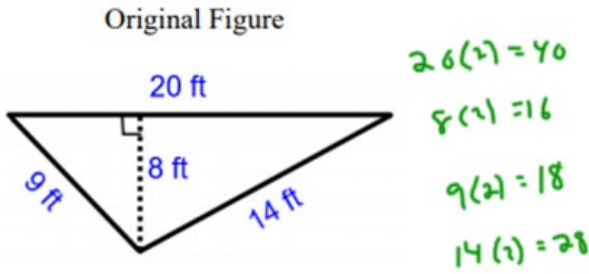
x = 26 ft   y = 52 ft   **26' x 52'**

b. What is the area of the real family room?

$A = (26)(52)$

A = 1352 ft²

Draw and label the sides of the similar figures with the given scale factor. Find the perimeter and area.

4.

Original Figure

20 ft

$26(2) = 40$

$8(2) = 16$

$9(2) = 18$

$14(2) = 28$

8 ft

9 ft

14 ft

Scale Factor = 2

40 ft

16 ft

18 ft

28 ft

Original Perimeter = $9 + 14 + 20 = \boxed{43 \text{ ft}}$

New Perimeter = $18 + 28 + 40 = \boxed{86 \text{ ft}}$

Original Area = $A = \frac{1}{2}(20)(8)$

$\boxed{A = 80 \text{ ft}^2}$

New Area = $A = \frac{1}{2}(40)(16)$

$\boxed{A = 320 \text{ ft}^2}$

How many times bigger is the new perimeter to the original perimeter?

2 times

How many times bigger is the new area to the original area?

4 times

Use proportions to solve the following.

5. The scale on a map is 1.5 cm equals 40 km in real life. You measure the distance between two cities on the map as 14 cm. How far apart are the cities in real life?

Map → $\frac{1.5}{40}$ = $\frac{14}{x}$

$\boxed{x = 373.\overline{3} \text{ miles}}$

real →

6. A baby doll is 1:12 of a real baby. If the real baby is 14 inches long, how big is the doll?

doll → $\frac{1}{12}$ = $\frac{x}{14}$

$\boxed{x = 1.1\overline{6} \text{ inches}}$

real →

7. Mr. Kelly buys a wallet size portrait of himself. He wants a poster made of his face from the wallet size that would be at the ratio 15:2. What are the dimensions of the poster?

2.5 cm

8 cm

poster → $\frac{15}{2}$ = $\frac{x}{2.5}$

wallet →

$\boxed{x = 18.75 \text{ cm}}$

$\frac{15}{2} = \frac{y}{8}$

$\boxed{y = 60 \text{ cm}}$

18.75 cm

60 cm poster