

I. Triangle Proportionality

1. Solve for the missing length.

$$\frac{3}{4} = \frac{x}{8}$$

$$24 = 4x$$

$$6 = x$$

2. Find the missing length.

$$\frac{x}{45-x} = \frac{15}{27}$$

$$12x = 675 - 15x$$

$$27x = 675$$

$$x = 25$$

3. Determine if
- \overline{EF}
- is parallel to
- \overline{QR}

$$\frac{3.9}{3} = \frac{3.6}{2.4}$$

$$9.36 \neq 10.8$$

No!

4. Determine if
- \overline{EF}
- is parallel to
- \overline{QR}

$$\frac{3.75}{5} = \frac{4.5}{6}$$

$$22.5 = 22.5$$

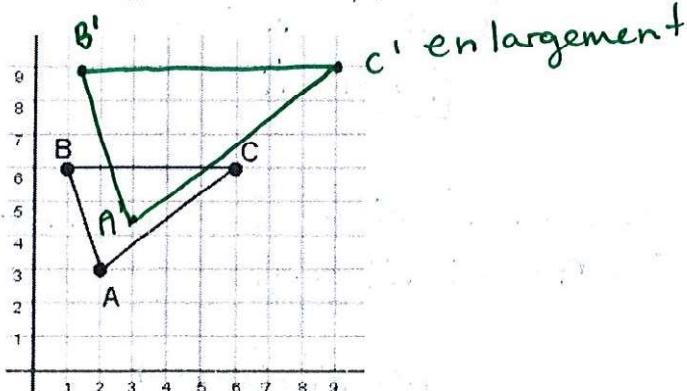
Yes!

II. Dilations and Scale Factor

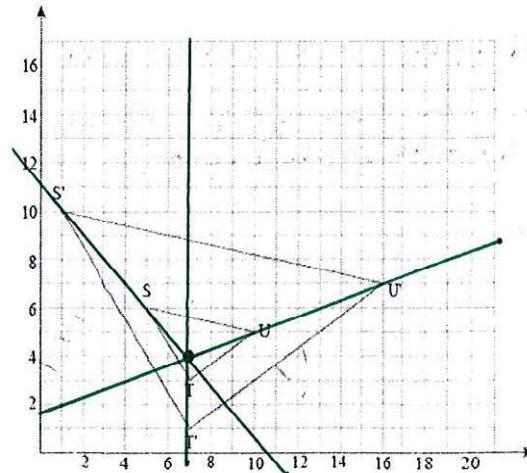
5.

- a. Graph the new image using the rule $(x, y) \rightarrow (\frac{3}{2}x, \frac{3}{2}y)$ and centered at the origin.

- b. What type of dilation was performed?



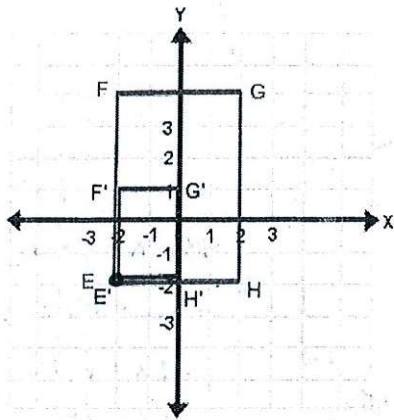
6.



- a. Find the center of dilation. $(7, 4)$

- b. Calculate the scale factor. $\frac{3}{1} = 3$

7.



- a. Find the center of dilation.

$$(-2, -2)$$

- b. Calculate the scale factor.

$$\frac{2}{4} = \frac{1}{2}$$

10. What two properties must similar figures have?
(HINT: something about the sides AND angles)

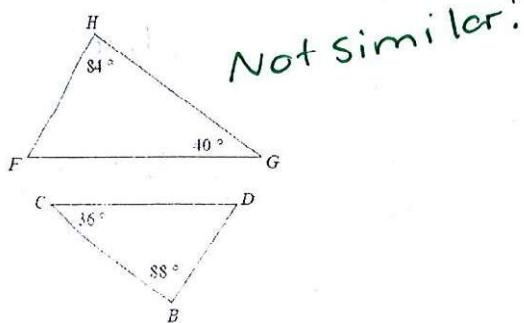
- Angles are congruent
- Sides are proportional
(same scale factor)

IV. Proving Similar Triangles

12. What are the only ways triangles can be similar?

- a) State if the triangles are similar or not. B) If they are similar, complete a similarity statement.

13.



8.

- a. How does perimeter change with scale factor?

Scale factor

- b. How does area change with scale factor?

Scale factor²

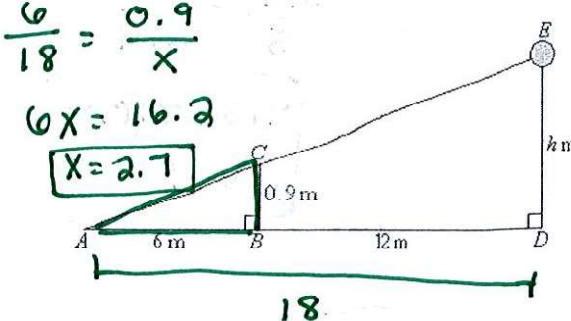
III. Similar Figures

9. Solve for ED.

$$\frac{6}{18} = \frac{0.9}{x}$$

$$6x = 16.2$$

$$x = 2.7$$



11. Shawn looked at a map and saw a scale of 1 in: 3 miles. The city of Kennesaw was 3 inches from Marietta. How far away is Kennesaw from Marietta?

$$\frac{1 \text{ in.}}{3 \text{ mi}} = \frac{3 \text{ in.}}{x}$$

$$x = 9 \text{ mi}$$

**AA Similarity, SSS Similarity,
SAS Similarity**

14.

SAS Similarity

