

NAME _____

Properties of Similar Polygons Homework

Determine whether each pair of polygons is similar. Explain.

1.

$\frac{17}{13} \approx 1.3$
 $\frac{15}{12} = 1.25$
 $\frac{8}{5} = 1.6$

Not Similar

2.

$\frac{15}{5} = 3$
 $\frac{45}{15} = 3$
 $\frac{24}{8} = 3$
 $\frac{22.8}{7.6} = 3$

Similar

Each pair of polygons is similar. Find each missing side measure.

3.

Scale Factor
 $\frac{10}{4} = 2.5$
 $5.6 \cdot 2.5 =$
14

4.

Scale Factor
 $\frac{12}{6} = 2$ $\frac{18}{9} = 2$
 $\frac{6}{3} = 2$
 $18 \div 2 =$ 9

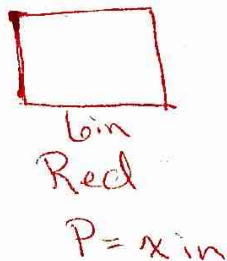
5.

Scale Factor $\frac{4.5}{6} = .75$ $4 \cdot .75 =$ 3
 OR $\frac{6}{4.5} = 1.\bar{3}$ $4 \div 1.\bar{3} =$ 3

6.

Scale factor
 $\frac{14}{3.5} = 4$ $\frac{20}{5} = 4$
 $8 \div 4 =$ 2

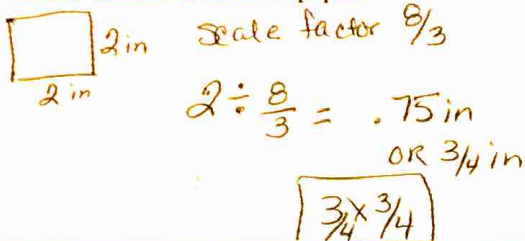
7. **TILES** A blue rectangular tile and a red rectangular tile are similar. The blue tile has a length of 10 inches and a perimeter of 30 inches. The red tile has a length of 6 inches. What is the perimeter of the red tile?



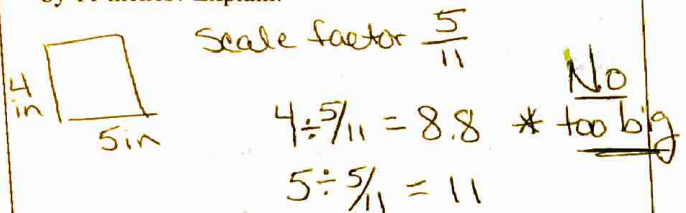
Scale factor $\frac{6}{10} = .6$
 $30 \cdot .6 =$ 18 in

Properties of Similar Polygons Applications

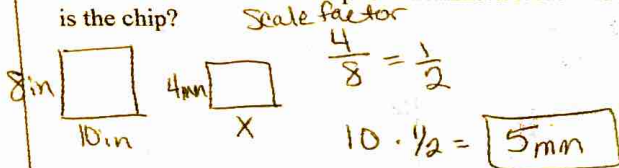
1. **JOURNALISM** The editor of the school newspaper must reduce the size of a graph to fit in one column. The original graph is 2 inches by 2 inches, and the scale factor from the original to the reduced graph is 8:3. Find the dimensions of the graph as it will appear in one column of the newspaper.



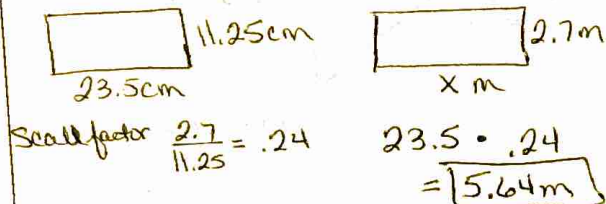
2. **PHOTOCOPIES** Lydia plans to use a photocopy machine to increase the size of a small chart that she has made as part of her science project. The original chart is 4 inches by 5 inches. If she uses a scale factor of 5:11, will the chart fit on a sheet of paper $8\frac{1}{2}$ inches by 11 inches? Explain.



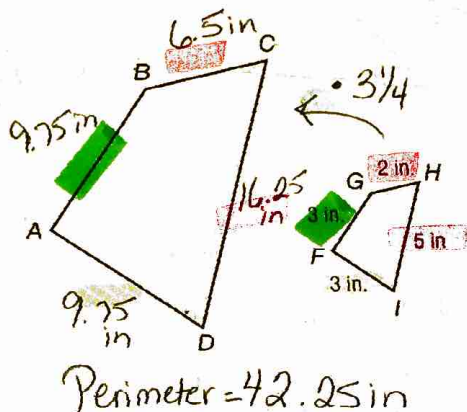
3. **MICROCHIPS** The image of a microchip in a projection microscope measures 8 inches by 10 inches. The width of the actual chip is 4 millimeters. How long is the chip?



4. **PROJECTIONS** A drawing on a transparency is 11.25 centimeters wide by 23.5 centimeters tall. The width of the image of the drawing projected onto a screen is 2.7 meters. How tall is the drawing on the screen?



5. **GEOMETRY** Polygon ABCD is similar to polygon FGHI. Each side of polygon ABCD is $3\frac{1}{4}$ times longer than the corresponding side of polygon FGHI. Find the perimeter of polygon ABCD.



$$9.75 + 9.75 + 6.5 + 16.25$$

6. **KITES** A toy company produces two kites whose shapes are geometrically similar. Find the length of the missing side of the smaller kite.

