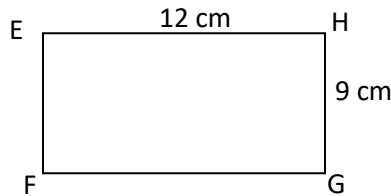
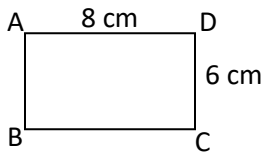


Applied Geometry (After QUIZ)

Ch 7 D 4 Exploration: Perimeter and Area of Similar Figures

The length of the sides of two similar figures are in proportion. The ratio of similarity describes how, exactly, the sides relate to each other. In this activity you will explore the perimeter and area of similar figures to determine whether the ratio of similarity describes how the perimeter and area relate to each other, as well.

Example 1: $ABCD \sim EFGH$



1. Color each pair of corresponding sides of each Rectangle a different color.
2. Check that the sides are **proportional**:

$$\frac{AD}{EH} =$$

$$\frac{DC}{HG} =$$

Similarity Ratio = _____

3. Perimeter of ABCD. _____

Ratio of Perimeters of ABCD & EFGH = _____

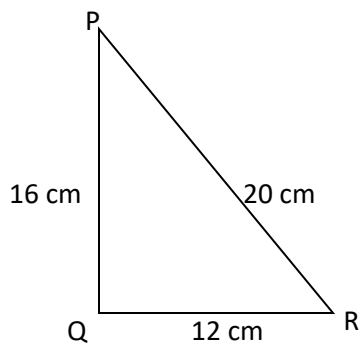
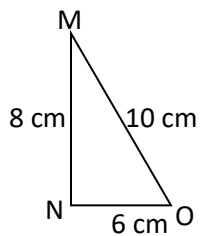
4. Perimeter of EFGH. _____

5. Area of ABCD. _____

Ratio of Areas of ABCD & EFGH = _____

6. Area of EFGH. _____

Example 2: $\triangle MNO \sim \triangle PQR$



1. Color each pair of corresponding sides of the triangles a different color.
2. Check that the sides are **proportional**:

$$\frac{MN}{PQ} =$$

$$\frac{NO}{QR} =$$

$$\frac{MO}{PR} =$$

Similarity Ratio = _____

3. Perimeter of $\triangle MNO$ = _____

Ratio of Perimeters of $\triangle MNO$ & $\triangle PQR$? = _____

4. Perimeter of $\triangle PQR$ = _____

5. Area of $\triangle MNO$ = _____

Ratio of Areas of $\triangle MNO$ & $\triangle PQR$? = _____

6. Area of $\triangle PQR$ = _____

NOW...Looking back at the 2 examples, what can you CONCLUDE about the Ratio of Perimeters & Ratio of Areas?

| Similarity Ratio | Perimeter Ratio | Area Ratio |
|------------------|-----------------|------------|
| | | |

Fill in the Table below using the Rules we just discovered.

| Ratio of Similarity (\sim) | Perimeter Ratio= (Ratio of \sim) | Ratio Area Ratio = (Ratio of \sim) ² |
|--------------------------------|-------------------------------------|--|
| $\frac{2}{3}$ | | |
| $\frac{7}{4}$ | | |
| $\frac{5}{2}$ | | |
| $\frac{1}{6}$ | | |
| $\frac{3}{8}$ | | |