Name _____   Date _____
Mr. Schlansky   Geometry

Ratio of Corresponding Sides

1. The ratio of the corresponding sides of two similar polygons is 3:1. Find the ratio of their:
   a) perimeters
   b) areas
   c) angles

2. The ratio of corresponding sides of two similar polygons is 2:7. Find the ratio of their:
   a) perimeters
   b) areas
   c) angles

3. The ratio of the perimeters of two similar polygons is 5:2. Find the ratio of their:
   a) corresponding sides
   b) areas
   c) angles

4. The ratio of the areas of two similar polygons is 9:4. Find the ratio of their:
   a) corresponding sides
   b) perimeters
   c) angles

5. Two triangles are similar, and the ratio of each pair of corresponding sides is 2 : 1. Which statement regarding the two triangles is *not* true?
1)   Their areas have a ratio of 4 : 1.
2)   Their altitudes have a ratio of 2 : 1.
3)   Their perimeters have a ratio of 2 : 1.
4)   Their corresponding angles have a ratio of 2 : 1.

6. Given $\triangle ABC \sim \triangle DEF$ such that $\frac{AB}{DE} = \frac{3}{2}$. Which statement is *not* true?

1) $\frac{BC}{EF} = \frac{3}{2}$ 3) $\frac{\text{area of } \triangle ABC}{\text{area of } \triangle DEF} = \frac{9}{4}$

2) $\frac{m\angle A}{m\angle D} = \frac{3}{2}$ 4) $\frac{\text{perimeter of } \triangle ABC}{\text{perimeter of } \triangle DEF} = \frac{3}{2}$

7. $\triangle ABC$ is similar to $\triangle DEF$. The ratio of the length of $\overline{AB}$ to the length of $\overline{DE}$ is $3:1$. Which ratio is also equal to $3:1$?

(1) $\frac{m\angle A}{m\angle D}$ (2) $\frac{m\angle B}{m\angle F}$ (3) $\frac{\text{area of } \triangle ABC}{\text{area of } \triangle DEF}$ (4) $\frac{\text{perimeter of } \triangle ABC}{\text{perimeter of } \triangle DEF}$

8. Given $\triangle ABC \cong \triangle DEF$, which statement is *not* always true?
1) $\overline{BC} \cong \overline{DF}$
2) $m\angle A = m\angle D$
3) area of $\triangle ABC$ = area of $\triangle DEF$
4) perimeter of $\triangle ABC$ = perimeter of $\triangle DEF$

9. Triangle *RJM* has an area of 6 and a perimeter of 12. If the triangle is dilated by a scale factor of 3 centered at the origin, what are the area and perimeter of its image, triangle *R'J'M'*?
1) area of 9 and perimeter of 15
2) area of 18 and perimeter of 36
3) area of 54 and perimeter of 36
4) area of 54 and perimeter of 108

10. Rectangle *A'B'C'D'* is the image of rectangle *ABCD* after a dilation centered at point *A* by a scale factor of $\frac{2}{3}$. Which statement is correct?

1) Rectangle *A'B'C'D'* has a perimeter that is $\frac{2}{3}$ the perimeter of rectangle *ABCD*.

2) Rectangle *A'B'C'D'* has a perimeter that is $\frac{3}{2}$ the perimeter of rectangle *ABCD*.

3) Rectangle *A'B'C'D'* has an area that is $\frac{2}{3}$ the area of rectangle *ABCD*.

4) Rectangle *A'B'C'D'* has an area that is $\frac{3}{2}$ the area of rectangle *ABCD*.

11. A triangle is dilated by a scale factor of 3 with the center of dilation at the origin. Which statement is true?
1) The area of the image is nine times the area of the original triangle.
2) The perimeter of the image is nine times the perimeter of the original triangle.
3) The slope of any side of the image is three times the slope of the corresponding side of the original triangle.
4) The measure of each angle in the image is three times the measure of the corresponding angle of the original triangle.

12. If $\triangle ABC$ is dilated by a scale factor of 3, which statement is true of the image $\triangle A'B'C'$?
1) $3A'B' = AB$
2) $B'C' = 3BC$
3) $m\angle A' = 3(m\angle A)$
4) $3(m\angle C') = m\angle C$