

- Answers:
1.
 - a. $\frac{9}{6}$ or $\frac{3}{2}$
 - b. $\frac{9}{6} = \frac{3}{x}$, $x = 2$
 - c. $P(\text{ABCD}) = 24$ and $P(\text{MNOP}) = 16$
 - d. $\frac{24}{16}$ or $\frac{3}{2}$
 2.
 - a. $\frac{16}{8}$ or $\frac{2}{1}$
 - b. $\frac{16}{8} = \frac{6}{x}$, $x = 3$
 - c. $6^2 + 8^2 = (\text{EG})^2$ $3^2 + 4^2 = (\text{HJ})^2$
 $\text{EG} = \text{EF} = 10$ $\text{HJ} = \text{HI} = 5$
 $\Delta\text{EFG} : P = 10 + 10 + 16 = 36$
 $\Delta\text{HIJ} : P = 5 + 5 + 8 = 18$
 - d. $\frac{36}{18}$ or $\frac{2}{1}$
 3.
 - a. $\frac{5}{2}$
 - b. $\odot\text{A} = 2(5) = 10$ $\odot\text{B} = 2(2) = 4$
 - c. $\frac{10\pi}{4\pi}$ or $\frac{5}{2}$
 4. The ratio of the sides is the same as the ratio of the perimeters (circumferences).
 5.
 - a. $\frac{3}{2}$
 - b. $A(\text{ABCD}) = 9(3) = 27$ $A(\text{MNOP}) = 6(2) = 12$
 - c. $\frac{27}{12}$ or $\frac{9}{4}$
 6.
 - a. $\frac{2}{1}$
 - b. $\Delta\text{EFG} : \frac{1}{2}(16)(6) = 48$ $\Delta\text{HIJ} : \frac{1}{2}(8)(3) = 12$
 - c. $\frac{48}{12}$ or $\frac{4}{1}$
 7.
 - a. $\frac{5}{2}$
 - b. $\odot\text{A} = \pi(5)^2 = 25\pi$ $\odot\text{B} = \pi(2)^2 = 4\pi$
 - c. $\frac{25\pi}{4\pi}$ or $\frac{25}{4}$
 8. The ratio of the areas of the similar figures equals the square of the ratio of the sides.

9. If two similar polygons or circles have lengths of corresponding sides (or radii) in the ratio of $\frac{a}{b}$, then their areas are in the ratio of $\frac{a^2}{b^2}$ or $\left(\frac{a}{b}\right)^2$.