

Name _____

Period _____ Date _____

Homework 8.3.2

1. Assume Figure A and Figure B, at right, are similar.

a. If the ratio of similarity is $\frac{5}{7}$, then what is the ratio of the perimeters of Figures A and B?

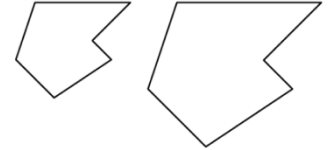


Figure A

Figure B

b. If the perimeter of Figure A is p and the linear scale factor is r , what is the perimeter of Figure B? (your answer will only contain letters)

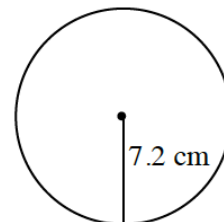
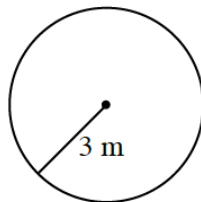
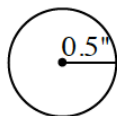
c. If the area of Figure A is a and the linear scale factor is r , what is the area of Figure B? (your answer will only contain letters)

2. Beth is creating a wildflower garden, and she is going to build the flowerbed in the shape of a regular hexagon. Each side of the flowerbed will be 2 yards long.

a. What will the area of the garden be in square yards?

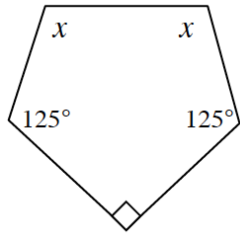
b. A packet of wildflower seeds covers 10 square feet. How many packets of wildflower seeds will Beth need?

3. Determine if the circles below (not drawn to scale) are similar. Justify your decision using calculations.

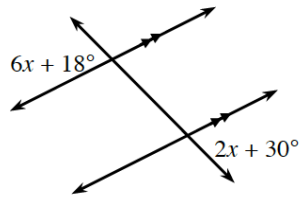


4. For each diagram below, write and solve an equation for x .

a.

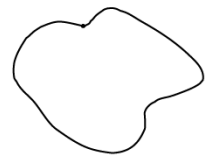


b.



5. Christie has tied a string that is 24 cm long into a closed loop, like the one at right.

- a. She decides to form an equilateral triangle with her string. What is the area of the triangle?



- b. She then forms a square with the same loop of string. What is the area of the square? Is it larger or smaller than the area of the equilateral triangle she created in part (a)?
- c. If she forms a regular hexagon with her string, what would be its area? Compare this area with the areas of the square and equilateral triangle from parts (a) and (b).
- d. Christie has a conjecture about what shape made with the string will enclose the greatest area. What shape do you think that Christie might be thinking of?