

8.4 Rotations Day 1

TSW understand concept of dilation

*drawing images after dilation

*find coordinates of points after dilation

dilation

*find the center of dilation

Vocabulary

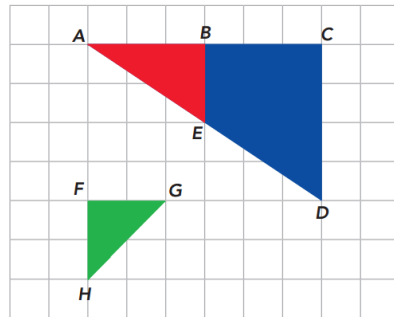
Dilation- the enlargement or reduction of a figure

Scale Factor

Center of Dilation

Example 14 Understand the concept of dilation.

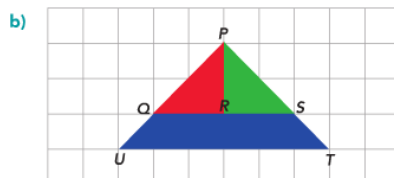
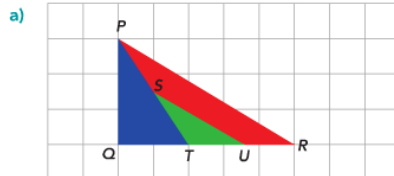
Mrs. Tonelli cuts three triangles from colored paper and pastes them on a board.
Which triangles are dilations of one another?



Guided Practice

Solve.

- 1 Which triangles are dilations of one another? Explain.



Example 15 Find the dimensions of figures after dilations.

Mrs. Marquez is making pancakes on a griddle. At first, the pancake batter forms a 4-inch circle. It flows to become a bigger circle. The scale factor of the dilation is 1.5. Find the diameter of the pancake.



Guided Practice

Copy and complete.

2 A rectangle has coordinates $A(5, 1)$, $B(3, 1)$, $C(3, 4)$, and $D(5, 4)$.

a) Find the length and width of $ABCD$.

The length of $ABCD$ is $\underline{\quad ? \quad}$ units. Its width is $\underline{\quad ? \quad}$ units.

b) Find the length and width of the image of $ABCD$ when dilated with scale factor 2.

Length of image: $\underline{\quad ? \quad} \cdot \underline{\quad ? \quad} = \underline{\quad ? \quad}$ units

Width of image: $\underline{\quad ? \quad} \cdot \underline{\quad ? \quad} = \underline{\quad ? \quad}$ units

c) Find the length and width of the image of $ABCD$ when dilated with scale factor $\frac{1}{2}$.

Length of image: $\underline{\quad ? \quad} \cdot \underline{\quad ? \quad} = \underline{\quad ? \quad}$ units

Width of image: $\underline{\quad ? \quad} \cdot \underline{\quad ? \quad} = \underline{\quad ? \quad}$ units

d) What are the coordinates of the image rectangle under each dilation if the center of dilation is at the origin?

	Scale Factor 2	Scale Factor $\frac{1}{2}$
A maps onto	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$
B maps onto	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$
C maps onto	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$
D maps onto	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$	$(\underline{\quad ? \quad}, \underline{\quad ? \quad})$

You may want to draw the rectangle and its images on the coordinate plane to solve **c**.

