LESSON Digits 10-2
Similar Figures

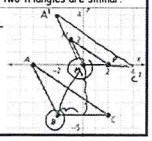
3/26/2019

(1)

Goal: I will be able to **determine if figures are similar.**

Tool Bag: Formulas, equations, Vocabulary, etc	Here's How: Notes & Examples
Similar Figures	if you can transform (translate, reflect, rotate, dilate) one to the other.
~	means similar
Example 1	$\triangle ABC \sim \triangle NOP$. Describe a series of rigid motion followed by a dilation the shows the two triangles are similar.

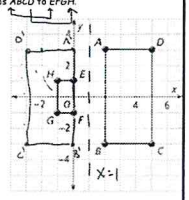
1) Translate 2 units to the right and 4 units up
2) Dilate $\triangle ABC$ by a scale factor of $\frac{1}{2}$



(2)

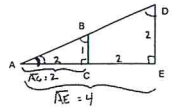
Example 2	$ABCD$ and $EFGH$ are rectangles. Given $ABCD \sim EFGH$, describe a sequence of a rigid motion followed by a dilation with center (0,0) that maps $ABCD$ to $EFGH$.

1) Reflect across the line $x=1$
Scale Factor = $\frac{\text{new}}{\text{orig.}} = \frac{2}{6} = \frac{1}{3}$
2) Dilate by a scale factor of $\frac{1}{3}$.



(3)

Effect of Dilations on:	$\triangle ADE$ is $\triangle ABC$ after a dilation with a scale factor of 2.
Angles: No change	$\angle A = \angle A$ $\angle C = \angle E$ $\angle B = \angle D$
Length of Sides	$\overline{AE} = 2 \cdot \overline{AC}$ $\overline{DE} = 2 \overline{BC}$ New Side = Scale Factor · (Original Side)

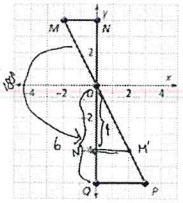


(4)

Example 3	Is $\triangle MNO \sim \triangle PQO$? Why?

1) Rotate it 180°
2) Dilate it by a scale factor of $\frac{3}{2}$

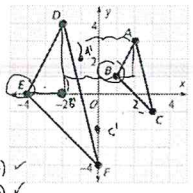
Scale factor = $\frac{\text{new}}{\text{orig}} = \frac{6}{4} = \frac{3}{2}$



(5)

You Try	Given $\triangle ABC \sim \triangle DEF$, describe a sequence of rigid motion followed by a dilation with center (0,0) that maps $\triangle ABC$ to $\triangle DEF$?

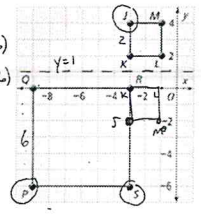
Scale factor: $\frac{4}{2} = 2$
$B(-2,0) \xrightarrow{\div 2} E(-4,0)$
1) Translate 2 units to the left and 1 unit down
2) Dilate by a scale factor of 2
$A(-1,2) \xrightarrow{\times 2} D(-2,4)$ ✓
$B(-2,0) \xrightarrow{\times 2} E(-4,0)$ ✓
$C(0,-2) \xrightarrow{\times 2} F(0,-4)$ ✓



(6)

You Try	JKLM and PQRS are squares. Given JKLM ~ PQRS, describe a sequence of rigid motion followed by a dilation with center (0,0) that maps JKLM to PQRS.

Scale factor = $\frac{6}{2} = 3$
$J'(-3,-2) \xleftarrow{\div 3} P(-9,-6)$
$M'(-1,-2) \xleftarrow{\div 3} S(-3,-6)$
1) Reflect across the line $y=1$
2) Dilate by a scale factor of 3



(7)

You Try	Which two triangles are similar?

$\triangle ABC \sim \triangle EFG$