Name: Answer Key

Level 1 - Transformation

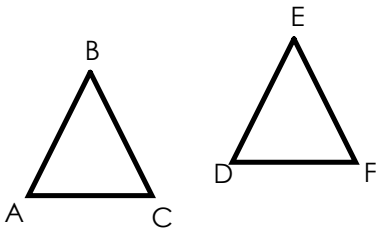
Review Packet

STUDY FOR 3 HOURS!

Key Facts

Rigid Motions

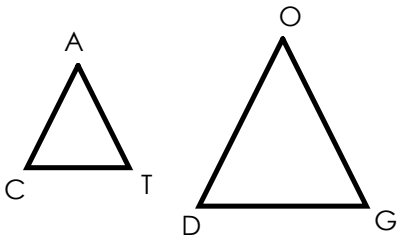
Rigid motions preserve the size of the side lengths and angle measures. For this reason, the image is always **congruent** to the pre-image.



A translation along BE maps △ABC onto △DEF

Dilations

Dilations change the side length but preserves the angle measures. For this reason, the image is always **similar** to the pre-image



A dilation with a scale factor of 2 maps △CAT onto △DOG

Minimum rotation

$$\frac{360}{n}$$

Scale Factor

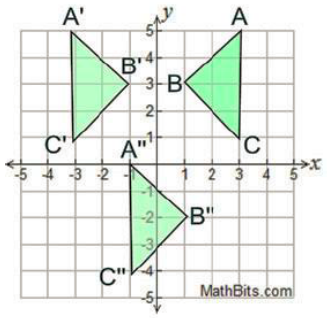
$$k = \frac{\text{Image}}{\text{Pre-Image}}$$

Skill: Multiple Choice Practice

1) Quadrilateral $ABCD$ undergoes a transformation, producing quadrilateral $A'B'C'D'$. For which transformation would the area of $A'B'C'D'$ *not* be equal to the area of $ABCD$?

(1) a rotation of 90° about the origin
(2) a reflection over the y-axis
(3) a dilation by a scale factor of 2
(4) a translation defined by $(x,y) \rightarrow (x + 4, y - 1)$

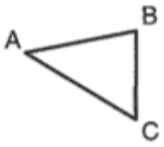
2)

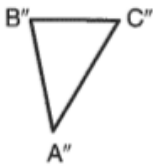


Which of the following descriptions (pertaining to the graph at the right) is true?

1) $\Delta A''B''C''$ is a translation of ΔABC.
2) $\Delta A''B''C''$ is a translation of $\Delta A'B'C'$.
3) $\Delta A''B''C''$ is a dilation in the origin of scale factor 2 of ΔABC.
4) $\Delta A'B'C'$ is a translation of ΔABC.

3) In the diagram below, $\triangle ABC \cong \triangle A''B''C''$.





Which sequence of transformations maps $\triangle ABC$ onto $\triangle A''B''C''$?

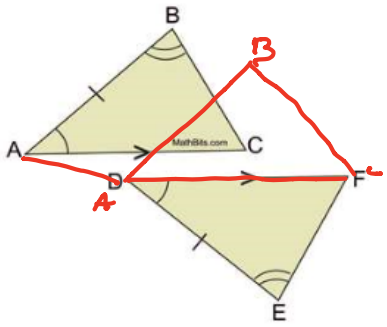
(1) a line reflection followed by a rotation
(2) a rotation followed by a line reflection
(3) a translation followed by a line reflection
(4) a rotation followed by a translation

Rigid Motion and Congruence Practice

Name_____

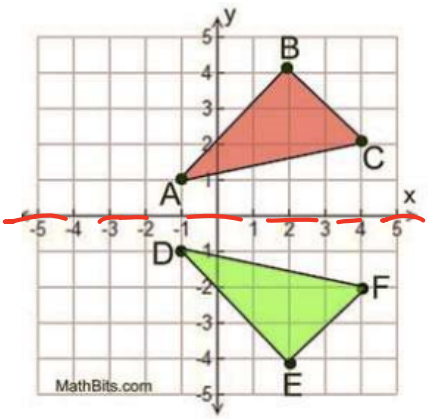
Directions: Read carefully and examine the diagrams. Remember that rigid motions include reflections, translations, rotations or combinations of these transformations.

1. Which rigid motion(s) will verify that ΔABC is congruent to ΔDEF as shown below?



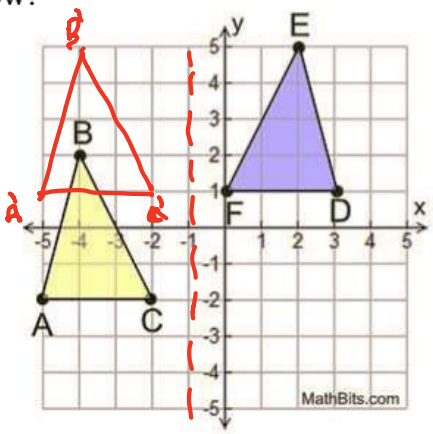
A translation along $\overline{AD}$ then a reflection over $\overline{DF}$

2. Which rigid motion will verify that ΔABC is congruent to ΔDEF as shown below?



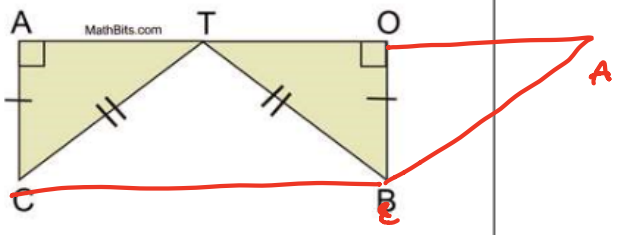
A reflection over the x-axis

3. Which rigid motion(s) will verify that ΔABC is congruent to ΔDEF as shown below?



A translation 2 units up and then a reflection over $x = -1$

4. Given a straight segment from A, through T, to O. Which rigid motion(s) will verify that ΔCAT is congruent to ΔBOT as shown below?



A translation along $\overline{BC}$ then a reflection over $\overline{OB}$

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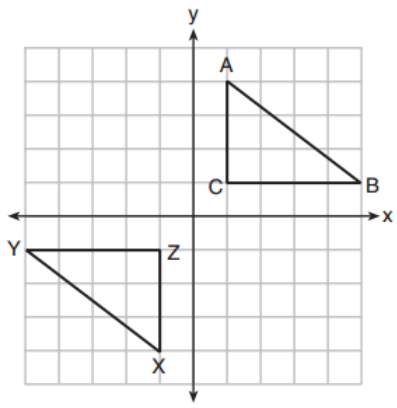
Skill: Describing Transformations

In the diagram below, $\triangle ABC$ and $\triangle XYZ$ are graphed.

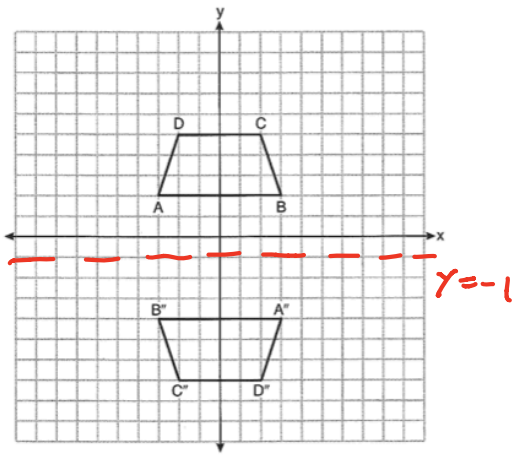


A rotation of 180° cc. around the origin maps $\triangle ABC$ onto $\triangle XYZ$. A rotation is a rigid motion and rigid motions preserve side lengths and angle measures

Use the properties of rigid motions to explain why $\triangle ABC \cong \triangle XYZ$.

Skill: Drawing Transformations

Quadrilaterals $ABCD$ and $A''B''C''D''$ are graphed on the set of axes below.

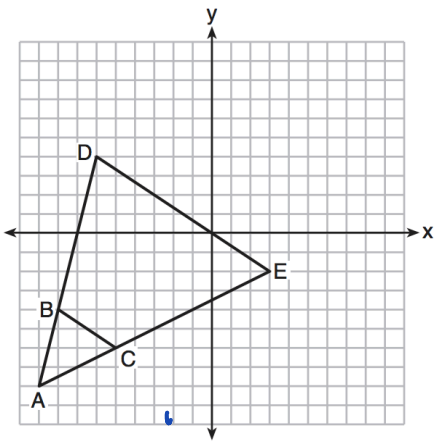


A reflection over the line $y=-1$ and then a reflection over the y-axis maps ABCD onto A"B"C"D"

Describe a sequence of transformations that maps trapezoid $ABCD$ onto trapezoid $A''B''C''D''$.

Skill: Drawing Transformations

Triangle ABC and triangle ADE are graphed on the set of axes below.

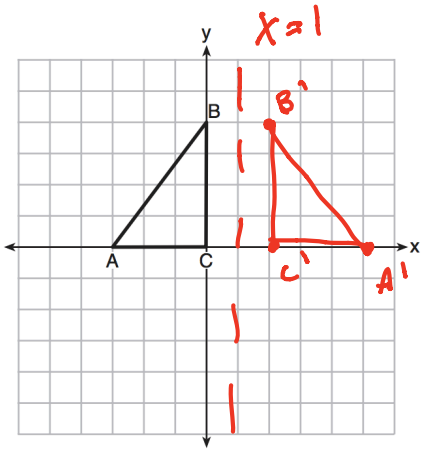


A dilation with a scale factor of 3 centered at point A maps ABC onto ADE

Describe a transformation that maps triangle ABC onto triangle ADE.

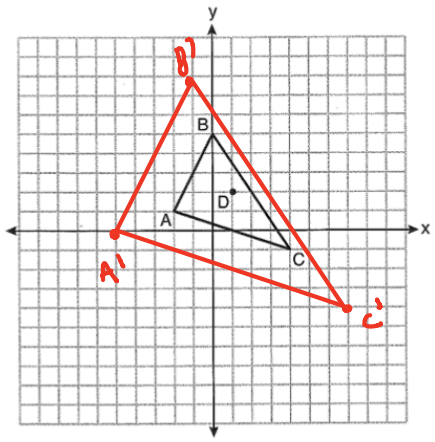
Skill: Drawing Transformations

Triangle ABC is graphed on the set of axes below. Graph and label $\triangle A'B'C'$, the image of $\triangle ABC$ after a reflection over the line $x = 1$.



Skill: Drawing Transformations

8 Triangle ABC and point $D(1,2)$ are graphed on the set of axes below.



Graph and label $\triangle A'B'C'$, the image of $\triangle ABC$ after a dilation of scale factor 2 centered at point D.

Skill: Drawing Transformations

Given: $\triangle ABC$ with coordinates $A(1,2)$, $B(0,5)$, and $C(5,4)$.

a On the graph below, draw and label $\triangle ABC$.

b Graph and state the coordinates of $\triangle A'B'C'$, the image of $\triangle ABC$ after the translation $T_{-6,3}$.

c Graph and state the coordinates of $\triangle A''B''C''$, the image of $\triangle A'B'C'$ after a reflection in the x-axis.

d Graph and state the coordinates of $\triangle A'''B'''C'''$, the image of $\triangle A''B''C''$ after a rotation of 90° counter clockwise around the origin