Just In Time Quick Check

**[Standard of Learning (SOL) 8.7b](https://www.doe.virginia.gov/home/showpublisheddocument/3112/637982466075270000)**

| Strand:Measurement and Geometry |
| --- |
| Standard of Learning (SOL) 8.7b ***The student will identify practical applications of transformations.*** |
| Grade Level Skills:  * Identify the type of translation in a given example. * Identify practical applications of transformations including, but not limited to, tiling, fabric, wallpaper designs, art, and scale drawings. |
| [**Just in Time Quick Check**](#jitqc) |
| [**Just in Time Quick Check Teacher Notes**](#jitqctn) |
| Supporting Resources:  * VDOE Mathematics Instructional Plans (MIPS)   + [8.7ab - Transformations](https://www.doe.virginia.gov/home/showpublisheddocument/17498/638039306791970000) (Word) / [PDF Version](https://www.doe.virginia.gov/home/showpublisheddocument/17500/638039306799300000) * VDOE Word Wall Cards: Grade 8 [(Word)](https://www.doe.virginia.gov/home/showpublisheddocument/18668/638046222773600000)  |  [(PDF)](https://www.doe.virginia.gov/home/showpublisheddocument/18666/638046223434500000)   + Reflection   + Translation   + Dilation   + Reflection and Translation * Other VDOE Resources   + [Translations and Reflections [eMediaVA]](https://emediava.org/lo/1000062191/playlist/2800003211)   + [Reflection [eMediaVA]](https://emediava.org/lo/1000022094/playlist/2800003211) * Desmos Activity   + [Des-Patterns](https://teacher.desmos.com/activitybuilder/custom/589a31ddda95a7a50509daa5) |
| Supporting and Prerequisite SOL**:** [8.7a](https://www.doe.virginia.gov/home/showpublisheddocument/25256/638045418768600000), [7.7](https://www.doe.virginia.gov/home/showpublisheddocument/25160/638045406409700000), [6.9](https://www.doe.virginia.gov/home/showpublisheddocument/25080/638045394347570000) |

SOL 8.7b - Just in Time Quick Check

1. Identify the type of transformation performed in each coordinate plane below.
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 1, Part A

Quadrilateral WXYZ with coordinates:
W(2, 3)
X(5, 2)
Y(4,-1)
Z(1, 0)
Quadrilateral WXYZ is flipped across the y-axis and becomes quadrilateral W'X'Y'Z' with coordinates:
W'(-2, 3)
X'(-5, 2)
Y'(-4, -1)
Z'(-1, 0)

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 1, Part B

Triangle ABC is graphed in the second quadrant and has coordinates:
A(-3, 4)
B(-3, 1)
C(-1, 1)
Triangle ABC is moved to quadrant four and becomes triangle A'B'C' with coordinates:
A'(1, 0)
B'(1, -3)
C'(3, -3)

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 1, Part C

Quadrilateral ABCD has coordinates:
A(-2, 2)
B(2, 2)
C(2, -2)
D(-4, -2)
Quadrilateral ABCD is reduced in size and becomes quadrilateral A'B'C'D' with coordinates:
A'(-1, 1)
B'(1, 1)
C'(1, -1)
D'(-2, -1)

1. The picture below shows the tiles in the school cafeteria. Zamien thinks that the tiles are being reflected while Chloe thinks that they are being translated. Explain who you think is correct and justify your answer.

Floor Tiles

Image of square tiles laid in a pattern of light gray and dark gray. Each tile is the same size.

1. Identify the type of transformation used to create the bullseye pattern.

Bullseye

Image of a bullseye made of different sized circles.

1. Sasha drew figure A on a coordinate plane. She then performed separate transformations that resulted in figures B, C, and D. Identify which figure is the image of figure A after a reflection over the y-axis. Justify your answer.

Coordinate Plane

Image of a coordinate plane with four five-sided figures. Each figure is graphed in a different quadrant.

Coordinates of Figure A: (4, 2), (2, 2), (2, 4), (4, 4), (3, 3)
Coordinates of Figure B: (-4, 2), (-2, 2), (-2, 4), (-4, 4), (-3, 3)
Coordinates of Figure C: (-4, -2), (-2, -2), (-2, -4), (-4, -4), (-3, -3)
Coordinates of Figure D: (4, -2), (2, -2), (2, -4), (4, -4), (3, -3)

SOL 8.7b - Just in Time Quick Check Teacher Notes

**Common Errors/Misconceptions and their Possible Indications**

1. Identify the type of transformation performed in each coordinate plane below.
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 1, Part A

Quadrilateral WXYZ with coordinates:
W(2, 3)
X(5, 2)
Y(4,-1)
Z(1, 0)
Quadrilateral WXYZ is flipped across the y-axis and becomes quadrilateral W'X'Y'Z' with coordinates:
W'(-2, 3)
X'(-5, 2)
Y'(-4, -1)
Z'(-1, 0)

*A common error a student may make is misidentifying the transformation as a rotation. Students are familiar with the term “rotation” as it is introduced in previous grade levels. This may indicate a need to emphasize the characteristics and vocabulary associated with specific transformations, particularly reflections across the x- or y-axis. Teachers are encouraged to model transformations using manipulatives and grid paper.*

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 1, Part B

Triangle ABC is graphed in the second quadrant and has coordinates:
A(-3, 4)
B(-3, 1)
C(-1, 1)
Triangle ABC is moved to quadrant four and becomes triangle A'B'C' with coordinates:
A'(1, 0)
B'(1, -3)
C'(3, -3)

*A common error a student may make is misidentifying the transformation as a rotation. This may indicate that the student does not recognize the combination of vertical and horizontal translations that are being used to create the image. It might be helpful for students to use manipulatives that they can move on a coordinate plane.*

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Question 1, Part C

Quadrilateral ABCD has coordinates:
A(-2, 2)
B(2, 2)
C(2, -2)
D(-4, -2)
Quadrilateral ABCD is reduced in size and becomes quadrilateral A'B'C'D' with coordinates:
A'(-1, 1)
B'(1, 1)
C'(1, -1)
D'(-2, -1)

*A common error a student may make is misidentifying the transformation as a translation. This may indicate that a student considers the movement of the vertices to be a translation, without considering the change in size. Teachers are encouraged to demonstrate dilations using technology, emphasizing the difference between rigid and non-rigid transformations as well as scale factors.*

1. The picture below shows the tiles in the school cafeteria. Zamien thinks that the tiles are being reflected while Chloe thinks that they are being translated. Explain who you think is correct and justify your answer.

Floor Tiles

Image of square tiles laid in a pattern of light gray and dark gray. Each tile is the same size.

*A student may believe that Zamien or Chloe is correct. A common error a student may make is the improper justification of either option.*

*If a student states that the tiles are being reflected, look for justifications that include a line(s) of symmetry over which tiles are being reflected. If a student states that the tiles are being translated, look for justifications that include vertical and horizontal movement.*

1. Identify the type of transformation used to create the bullseye pattern.

Bullseye

Image of a bullseye made of different sized circles.

*A common error a student may make is misidentifying the transformation as a translation. This may indicate that a student does not recognize the difference between rigid and non-rigid transformations. Teachers are encouraged to emphasize the specific types of transformations and their descriptions by displaying a standard-specific word wall and regularly reviewing vocabulary along with practical applications of transformations.*

1. Sasha drew figure A on a coordinate plane. She then performed separate transformations that resulted in figures B, C, and D. Identify which figure is the image of figure A after a reflection over the y-axis. Justify your answer.

Coordinate Plane

Image of a coordinate plane with four five-sided figures. Each figure is graphed in a different quadrant.

Coordinates of Figure A: (4, 2), (2, 2), (2, 4), (4, 4), (3, 3)
Coordinates of Figure B: (-4, 2), (-2, 2), (-2, 4), (-4, 4), (-3, 3)
Coordinates of Figure C: (-4, -2), (-2, -2), (-2, -4), (-4, -4), (-3, -3)
Coordinates of Figure D: (4, -2), (2, -2), (2, -4), (4, -4), (3, -3)

*A common error a student may make is misidentifying figure D as a reflection over the y-axis. This may indicate a need to emphasize vocabulary associated with the coordinate plane, focusing on the x- and y-axis. When reflecting a figure in the coordinate plane, it might be helpful for students to highlight the axis over which they are reflecting.*