

Assignment

Write

Complete each sentence with a term from the box.

line segment	point	collinear points	line	ray	angle	rotation angle
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1. A(n) _____ is a location in space.
2. A(n) _____ is a straight continuous arrangement of an infinite number of points.
3. Points that are all located on the same line are _____.
4. A(n) _____ is a portion of a line that includes two points and all of the collinear points between the two points.
5. A(n) _____ is a portion of a line that begins with a single point and extends infinitely in one direction.
6. A(n) _____ is a directed angle.
7. A(n) _____ is a set of points consisting of a vertex point and two rays extending from the vertex point.

Remember

Translations can be described using lines and line segments. Reflections can be described using lines. Rotations can be described using rotation angles.

Pre-images transformed by rigid motions such as translations, reflections, and rotations are congruent to their images.

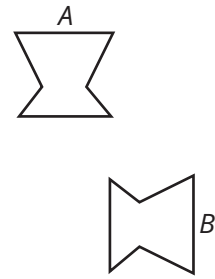
Practice

Create a transformation machine to perform each sequence of transformations. Describe the geometric objects you used to create each machine. Draw an example of a transformation performed by the transformation machine.

1. translate a figure to the left then translate the figure up
2. translate a figure down then reflect the figure across a horizontal line
3. rotate a figure clockwise 180° then translate the figure to the right
4. reflect a figure across a vertical line then rotate the figure clockwise 90°
5. translate a figure up then reflect the figure across a vertical line
6. rotate a figure clockwise 90° then reflect the figure across a horizontal line
7. translate a figure to the right then reflect the figure across a horizontal line
8. reflect a figure across a horizontal line then translate the figure down
9. translate a figure to the left, rotate the figure counterclockwise 90° , then reflect the figure across a vertical line
10. rotate a figure clockwise 90° , translate the figure down, and then reflect the figure across a horizontal line

Stretch

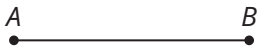
Determine three different transformation machines that could be used to get the figure at position A to position B . Describe the geometric objects you used to create each machine. Draw an example of a transformation performed by the transformation machine.



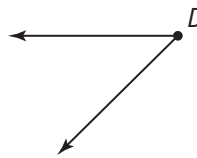
Review

1. Construct each figure described.

a. Duplicate \overline{AB} .

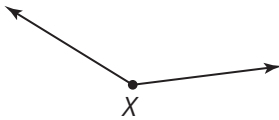


b. Duplicate $\angle D$.

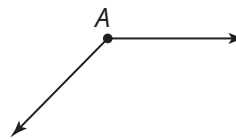


2. Construct the angle bisector of each given angle.

a.



b.



3. Determine whether the two lines are parallel, perpendicular, or neither. Explain your reasoning.

a. $2x - 3y = 15$ and $y = -\frac{3}{2}x - 10$

b. $-\frac{6}{5}x + 4y = \frac{1}{5}$ and $-3(x - \frac{10}{3}y) = 17$