

Write

Determine whether each statement is true or false. If the statement is false, rewrite it so that it becomes a true statement.

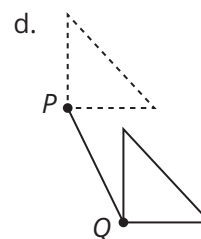
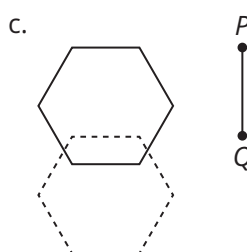
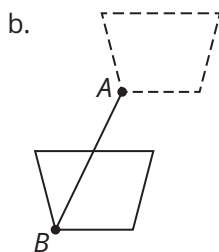
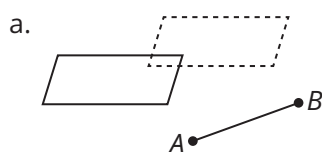
1. A translation function along parallel lines is a type of geometric transformation that is non-rigid.
2. Isometries include geometric transformations such as translations, rotations, and reflections.
3. A transformation is an isometry if it does not preserve size and shape.
4. A dilation is a non-rigid geometric transformation.

Remember

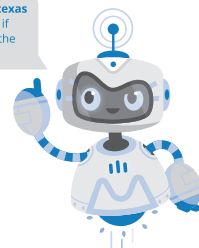
A translation is a function, T , which takes as its input a set of pre-image points and outputs a set of image points. The pre-image points are translated a distance of AB in the direction AB . For example, a translation of point P could be expressed as $T_{AB}(P)$, or P' .

Practice

1. Write a function to describe each translation. Each solid figure is a pre-image, and each dashed figure is an image.

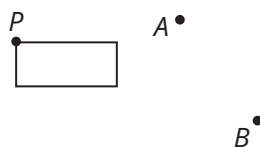


Visit livehint.com/texas or use this QR code if you need a hint on the Practice questions.

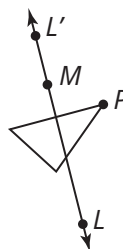


2. Complete each translation given the function.

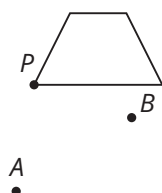
a. $T_{AB}(\text{Rectangle}) = \text{Rectangle}'$



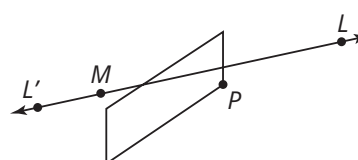
b. $T_{LM}(\text{Triangle}) = \text{Triangle}'$



c. $T_{BA}(\text{Trapezoid}) = \text{Trapezoid}'$



d. $T_{LM}(\text{Parallelogram}) = \text{Parallelogram}'$

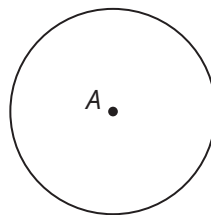


Stretch

1. A translation function for a trapezoid is given as T_{PQ} (Trapezoid $ABCD$) = Trapezoid $A'B'C'D'$. Trapezoid $ABCD$ has vertices $A(-7, -1)$, $B(-5, -1)$, $C(-4, -4)$, and $D(-8, -4)$. If P is located at $(-2, 3)$ and Q is located at $(7, 5)$, determine the vertices of the translated trapezoid $A'B'C'D'$.
 - a. Draw points P and Q and trapezoids $ABCD$ and $A'B'C'D'$ on a coordinate plane. Include a dashed line between points P and Q .
 - b. Determine the distance traveled by each point of the trapezoid and the slope of the line along which the points moved.

Review

1. Construct a square inscribed in a circle using the given line segment.
2. Construct a regular hexagon inscribed inside circle A .



3. Identify the mappings that are functions. If the mapping is not a function, explain why not.
 - a. $\{(1, 1), (1, 3), (3, 1), (2, 2), (5, 5)\}$
 - b. $\{(2, 4), (3, 5), (4, 6), (6, 8), (8, 10)\}$
 - c. $\{(-1, 2), (0, 1), (1, 1), (2, 1), (3, 1), (4, 0)\}$