

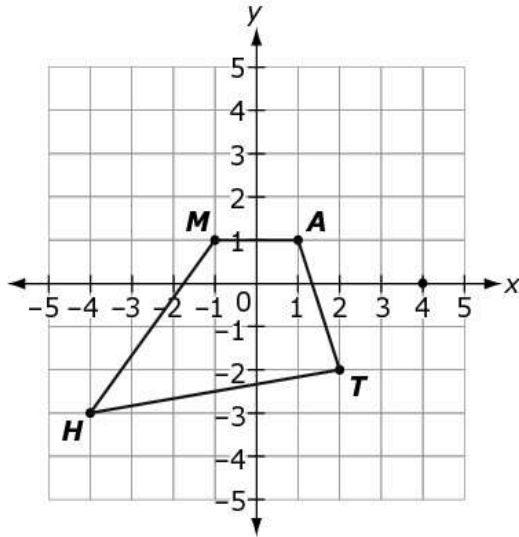
MAFS.912.G-SRT.1.1	<p>Verify experimentally the properties of dilations given by a center and a scale factor:</p> <ol style="list-style-type: none"> <li>A dilation takes a line not passing through the center of the dilation to a parallel line and leaves a line passing through the center unchanged.</li> <li>The dilation of a line segment is longer or shorter in the ratio given by the scale factor.</li> </ol>
Item Types	<p>Editing Task Choice – May require choosing a statement in a narrative description.</p> <p>Equation Editor – May require determining the scale factor of a given dilation.</p> <p>GRID – May require constructing lines and/or line segments to show the effects of a given dilation.</p> <p>Matching Item – May require choosing true statements given a dilation’s center and scale factor.</p> <p>Multiselect – May require selecting figures that show a correct dilation.</p> <p>Open Response – May require explaining whether or not a dilation is accurate or explaining how the scale factor is determined for a given dilation.</p> <p>Table Item – May require generating tables and creating dilations based on scale factor input values.</p>
Clarifications	<p>When dilating a line that does not pass through the center of dilation, students will verify that the dilated line is parallel.</p> <p>When dilating a line that passes through the center of dilation, students will verify that the line is unchanged.</p> <p>When dilating a line segment, students will verify that the dilated line segment is longer or shorter with respect to the scale factor.</p>
Assessment Limits	<p>Items may use line segments of a geometric figure.</p> <p>The center of dilation and scale factor must be given.</p> <p>Scale factors may be written as a rule.</p>
Stimulus Attributes	<p>Items may give the student a figure or its dilation, center, and scale and ask the student to verify the properties of dilation.</p> <p>Items may be set in a real-world or mathematical context.</p>
Response Attribute	
Calculator	Neutral

Sample Item

Item Type

Multiselect

Quadrilateral  $MATH$  is shown.



Quadrilateral  $MATH$  is dilated by a scale factor of 2.5 centered at  $(1, 1)$  to create quadrilateral  $M'A'T'H'$ .  
Select all the statements that are true about the dilation.

- $\overline{MA} \cong \overline{M'A'}$
- $\overline{A'T'}$  will overlap  $\overline{AT}$ .
- $\overline{M'A'}$  will overlap  $\overline{MA}$ .
- The slope of  $\overline{HT}$  is equal to the slope of  $\overline{H'T'}$ .
- The area of  $M'A'T'H'$  is equal to 2.5 times the area of  $MATH$ .