

Grade 8 - Dilations and Similar Figures - Test Answer Key

Common Core 8.G.A.3, 8.G.A.4 · maths-pdf.fr/en/

Use this answer key to score the dilations and similar figures test out of 20 points. Each solution shows the full work and a scoring guide, so partial credit can be given fairly when a student shows correct steps but makes an arithmetic slip.

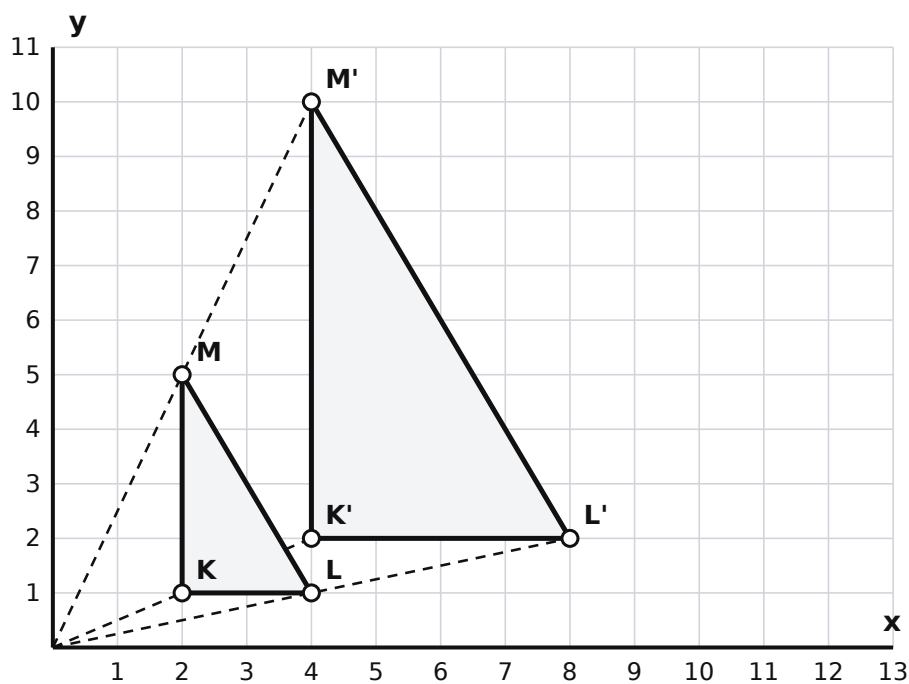
Grade 8 · Common Core State Standards: **8.G.A.3, 8.G.A.4**

Question 1 - Dilate points [2 pts]

- a. $(12, -20)$
- b. $(3, 2)$

Scoring: 1 point each.

Question 2 - Dilate a figure [3 pts]



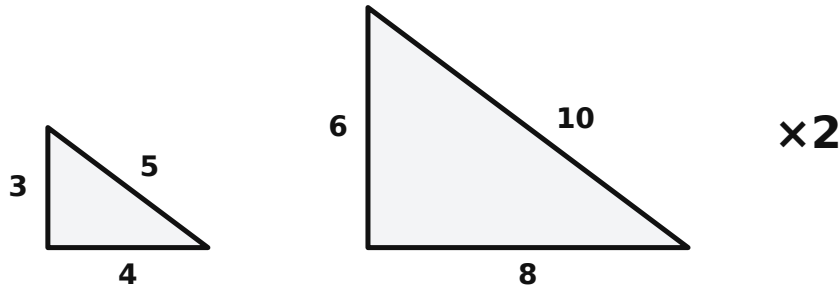
The image doubles each coordinate.

$$(x, y) \rightarrow (2x, 2y).$$

$K'(4,2)$, $L'(8,2)$, $M'(4,10)$

Scoring: 1 point for the rule. 2 points for three vertices.

Question 3 - Scale factor [2 pts]



Each side of the large triangle is 2 times the matching side.

$$k = \frac{6}{3} = 2. \text{ Perimeter: } 12 \cdot 2 = 24.$$

Scoring: 1 point for the scale factor. 1 point for the perimeter.

Question 4 - Missing length [3 pts]

$$k = \frac{15}{5} = 3. HI = 7 \cdot 3 = 21.$$

Scoring: 1 point for the scale factor, 1 point for matching sides, 1 point for 21.

Question 5 - Tree height [3 pts]

$$\frac{h}{5} = \frac{12}{3}, \text{ so } h = 5 \cdot 4 = 20 \text{ feet.}$$

Scoring: 1 point for the proportion. 1 point for solving. 1 point for 20 ft.

Question 6 - Area [2 pts]

Image side: 15 cm, area 225. Original area: 25. The area is 9 times as large.

Scoring: 1 point for 225. 1 point for the comparison.

Question 7 - Describe a sequence [3 pts]

Dilation with scale factor 3 gives $(3,0)$, $(6,0)$, $(3,6)$. Reflection across the y-axis gives $(-3,0)$, $(-6,0)$, $(-3,6)$.

Scoring: 1 point for the dilation, 1 point for the reflection, 1 point for order and checking.

Question 8 - Explain [2 pts]

Both have equal corresponding angles. Congruent figures also have equal lengths; similar figures have lengths in proportion.

Scoring: 1 point for angles. 1 point for lengths.

Total**20 points**