

Grade 8 - Dilations and Similar Figures - Test

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

Name: _____ Class: _____ Date: ____/____/____

This 20-point test checks dilations, scale factors, similar figures and similarity transformations (Common Core 8.G.A.3 and 8.G.A.4). Work alone, show every step, and write each final answer clearly. You have 45 minutes. Calculators are not needed unless a question says so.

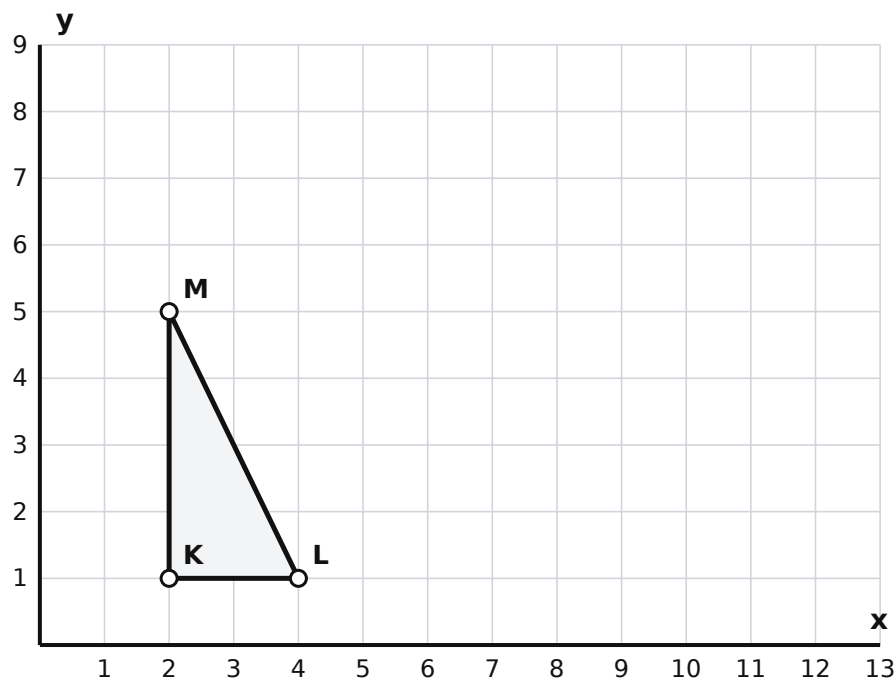
About this test

- Grade: Grade 8
- Chapter: Dilations and Similar Figures
- Standards: 8.G.A.3, 8.G.A.4
- Time: 45 minutes
- Total: 20 points

Question 1 - Dilate points [2 pts]

- Dilate $(3, -5)$ from the origin by scale factor 4. (1 point)
- Dilate $(12, 8)$ from the origin by scale factor $\frac{1}{4}$. (1 point)

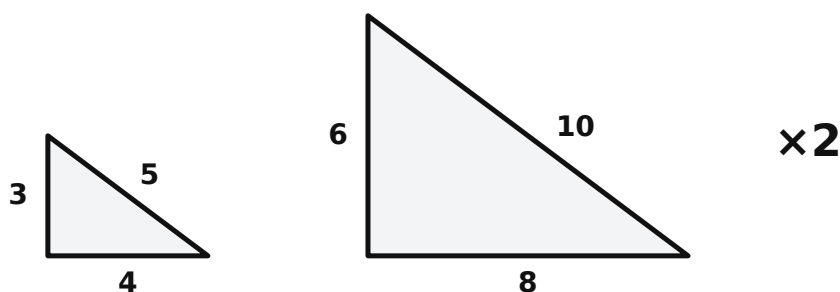
Question 2 - Dilate a figure [3 pts]



Triangle KLM.

Dilate triangle KLM from the origin with scale factor 2. List the image vertices.

Question 3 - Scale factor [2 pts]



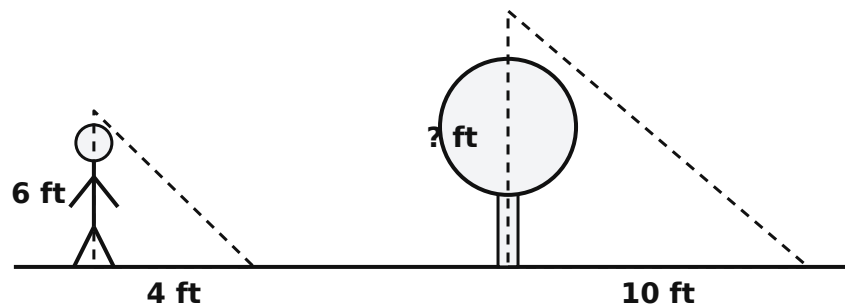
Each side of the large triangle is 2 times the matching side.

The triangles are similar. Find the scale factor from the small to the large triangle, and the perimeter of the large triangle if the small one has perimeter 12.

Question 4 - Missing length [3 pts]

Triangle DEF is similar to triangle GHI . $DE=5$, $EF=7$, and $GH=15$. Find HI .

Question 5 - Tree height [3 pts]



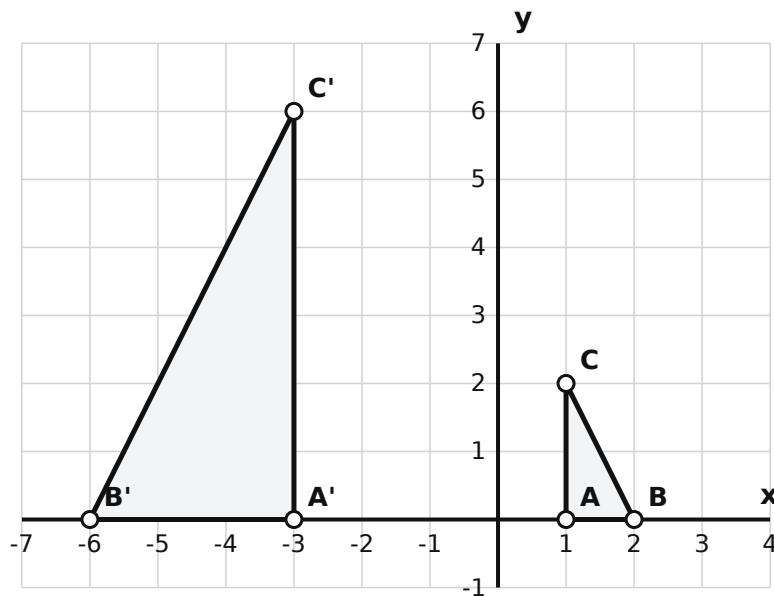
Sun rays make similar right triangles.

A 5-foot student casts a 3-foot shadow. A flagpole casts a 12-foot shadow at the same time. How tall is the flagpole?

Question 6 - Area [2 pts]

A square has side 5 cm. It is dilated with scale factor 3. Find the area of the image and compare it to the original area.

Question 7 - Describe a sequence [3 pts]



Triangle ABC and its image.

Describe a sequence of transformations that maps ABC to $A'B'C'$.

Question 8 - Explain [2 pts]

Explain how similar figures differ from congruent figures. Use the words angles and lengths.