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Dilations of Figures

Name _____ Score _____

Math Blast

Solve and show all steps.

A triangle has vertices at A(1, 2), B(3, 1), and C(2, 4). If the triangle is dilated by a scale factor of 3 with the center of dilation at the origin (0,0), what are the new coordinates of its vertices A', B', and C'?	Show all steps here
A quadrilateral has vertices at P(8, 4), Q(4, 8), R(12, 10), and S(10, 2). If the quadrilateral is dilated by a scale factor of 1/2 with the center of dilation at the origin (0,0), what are the new coordinates of its vertices P', Q', R', and S'?	Show all steps here
A point X(2, -3) is dilated from the origin to create point X'(8, -12). What is the scale factor of this dilation?	Show all steps here
A line segment has endpoints M(2, 1) and N(4, 5). If the segment is dilated by a scale factor of 2 with the center of dilation at D(1, 0), what are the new coordinates of its endpoints M' and N'?	Show all steps here
If a figure is dilated by a scale factor of 1.5, will the new figure be an enlargement, a reduction, or the same size as the original? Explain why.	Show all steps here

Dilations of Figures

Answer Key

Solve and show all steps.

The new coordinates are A'(3, 6), B'(9, 3), C'(6, 12).

The new coordinates are P'(4, 2), Q'(2, 4), R'(6, 5), S'(5, 1).

The scale factor is **4**.

The new endpoints are M'(3, 2) and N'(7, 10).

The new figure will be an **enlargement**. This is because the scale factor (1.5) is greater than 1, meaning all distances from the center of dilation will be multiplied by 1.5, making the figure larger.