

Dilations Worksheet Answer Key PDF

Dilations Worksheet Answer Key PDF

Disclaimer: The dilations worksheet answer key pdf was generated with the help of StudyBlaze AI. Please be aware that AI can make mistakes. Please consult your teacher if you're unsure about your solution or think there might have been a mistake. Or reach out directly to the StudyBlaze team at max@studyblaze.io.

Part 1: Building a Foundation

What is the center of dilation in a geometric transformation?

undefined. The point where the figure is rotated

undefined. The fixed point around which the figure is enlarged or reduced ✓

undefined. The midpoint of the figure

undefined. The point where the figure is reflected

The center of dilation is the fixed point around which the figure is enlarged or reduced.

Which of the following statements are true about dilations? (Select all that apply)

undefined. Dilations change the shape of a figure.

undefined. Dilations can enlarge or reduce a figure. ✓

undefined. Dilations preserve the angles of a figure. ✓

undefined. Dilations always have a scale factor greater than 1.

Dilations can enlarge or reduce a figure, preserve angles, but do not change the shape.

Explain what a scale factor is and how it affects a dilation.

A scale factor is a number that scales, or multiplies, the dimensions of a figure, affecting its size in dilation.

List the properties of dilations that remain unchanged after the transformation.

1. What properties remain unchanged?

Angles and the shape's similarity.

The properties that remain unchanged include the angles and the shape's similarity.

Part 2: Understanding and Interpretation

If a triangle is dilated with a scale factor of 0.5, what happens to the size of the triangle?

undefined. It doubles in size.

undefined. It remains the same size.

undefined. It reduces to half its original size. ✓

undefined. It becomes four times larger.

The triangle reduces to half its original size.

Which of the following are effects of a dilation with a scale factor less than 1? (Select all that apply)

undefined. The figure is enlarged.

undefined. The figure is reduced. ✓

undefined. The angles of the figure change.

undefined. The orientation of the figure is preserved. ✓

A scale factor less than 1 reduces the figure and preserves angles.

Describe how the center of dilation influences the resulting image of a figure.

The center of dilation affects the position and size of the resulting image based on its location relative to the figure.

Part 3: Application and Analysis

A rectangle is dilated by a scale factor of 3 with the center of dilation at one of its vertices. What is the effect on the rectangle?

undefined. The rectangle is reduced to one-third its size.

undefined. The rectangle is unchanged.

undefined. The rectangle is enlarged three times its original size. ✓

undefined. The rectangle is rotated.

The rectangle is enlarged three times its original size.

Which real-world scenarios can involve the use of dilations? (Select all that apply)

undefined. **Resizing a photograph** ✓

undefined. **Constructing a scale model of a building** ✓

undefined. Rotating a wheel

undefined. **Mapping a city layout** ✓

Dilations can be used in resizing images, creating models, and mapping layouts.

Provide an example of how dilations are used in creating maps and explain the importance of scale factor in this context.

Maps use dilations to represent large areas on a smaller scale, with the scale factor determining the ratio of real distance to map distance.

Part 4: Evaluation and Creation

When a figure is dilated with a scale factor of 2 from a center point outside the figure, what happens to the distances between points on the figure?

undefined. Distances are halved.

undefined. Distances remain the same.

undefined. **Distances are doubled.** ✓

undefined. Distances are quadrupled.

Distances are doubled when a figure is dilated with a scale factor of 2.

Analyzing a dilation, which of the following statements are correct? (Select all that apply)

undefined. The image and pre-image are congruent.

undefined. **The image is similar to the pre-image.** ✓

undefined. **The scale factor determines the degree of enlargement or reduction.** ✓

undefined. The dilation changes the orientation of the figure.

The image is similar to the pre-image, and the scale factor determines the degree of enlargement or reduction.

Analyze how changing the center of dilation affects the resulting image of a geometric figure.

Changing the center of dilation alters the position and size of the resulting image, affecting how the figure is transformed.

Which scenario best demonstrates the concept of dilation in art?

undefined. Drawing a portrait

undefined. Creating a perspective drawing with vanishing points ✓

undefined. Sketchin a landscape

undefined. Painting a mural

Creating a perspective drawing with vanishing points demonstrates the concept of dilation in art.

Evaluate the following statements about dilations and select those that reflect their significance in mathematics. (Select all that apply)

undefined. Dilations are crucial for understanding similarity. ✓

undefined. Dilations have no practical applications.

undefined. Dilations help in resizing objects proportionally. ✓

undefined. Dilations distort the original figure.

Dilations are crucial for understanding similarity and help in resizing objects proportionally.

Design a real-world problem where dilation is used to solve a practical issue. Explain the problem and how dilation provides a solution.

Dilation can be used in various real-world problems, such as resizing blueprints for construction, ensuring accurate proportions.