

Dilation - Word Problems Analytic Geometry

Name _____ Period ____ Date _____

(Show the work on your own paper)

1. Andrew wants to dilate a triangle. If the original triangle has a base of 15 units and an area of 60 square units, what will be the area of the new triangle if the new base is 75?
2. If a dilated rectangle has dimensions of 25' by 30', what is the area of the original if it's longest side is 6'?
3. If the perimeter of a rectangular garden with a width of 15' is 125', what is the perimeter of the dilated garden if the scale factor is 60%?
4. A square has a side measure of 55 units. What is the area of its copy if it has been dilated by a scale factor of 7?
5. If a triangle with an area of 30 square yards and an altitude of 6 yards is dilated to a height of 90 yards, what is its new area?
- 6) Two triangles are similar to each other. The base of one triangle is 30 cm. while the base of the other is 45 cm. What is the ratio of the areas of the small triangle to the large?
- 7) A picture of Fred Flintstone is placed on a coordinate plane. That picture undergoes a 150% dilation with respect to the origin. One point on Fred originally was found at (6, 9). What are the coordinates of the dilated image of this point?
- 8) The area of a dilated triangle is 18 square meters with a height of 3 meters. The base of the original triangle is 4 meters. What was the scale factor used in the dilation?
9. The dimensions of an original rectangle are 10 cm by 16 cm. What is the area of the dilated rectangle using a scale factor of $\frac{1}{2}$?
10. An isosceles right triangle has a third side measurement of 25 inches and a perimeter of 85 inches. The leg of the dilated triangle measures 6 inches. What is the perimeter of the dilated triangle?

6-8 Word Problem Practice

Dilations

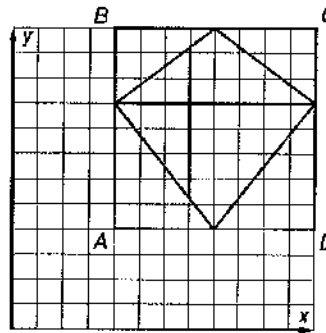
1. GEOMETRY A parallelogram has vertices at $A(-8, 5)$, $B(10, 3)$, $C(1, -5)$, and $D(-4, -3)$. Find the coordinates of the figure after a dilation with a scale factor of 0.5.

2. PENNANTS Linda is sketching a triangular pennant on a piece of grid paper. The triangle's vertices are located at $(1, 3)$, $(1, 15)$, and $(16, 9)$. Once she got the sketch the way she wanted, she drew a larger copy. Find the coordinates of the triangle after a dilation with a scale factor of 3.

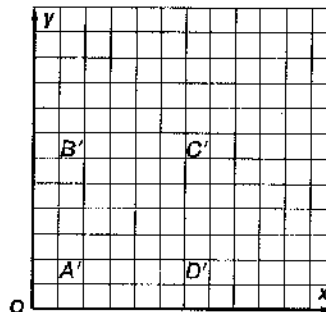
3. PHOTOS Rita enlarged a picture on a photocopier. The original photo was 3.5 by 5 inches. The copy was 8.75 by 12.5 inches. What is the scale factor of the dilation?

4. STAMPS Mike had a photo made into a postage stamp. The photo was 7 by 9.5 inches and the stamp was 1.4 by 1.9 inches. What is the scale factor of the dilation?

5. ADVERTISING An ad agency designed a logo for a company. The logo is shown below. Each square on the grid represents 1 square inch.



a. The company wants to create a smaller version of the logo to use on their letterhead. Graph the dilation of the logo with a scale factor of $\frac{1}{2}$.



b. The company wants to enlarge the logo for t-shirts. What would the coordinates of the vertices of the outer edge of the figure be after a dilation with a scale factor of 1.5?

c. The company wants to produce a large version of the logo to put over their company headquarters. The logo will be 6 feet wide. What is the scale factor of the dilation?

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