

Geometry CC - Unit 7
 LESSON 6: Dilations as Transformations of the Plane
 M2 L 6 - 9

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HOMEWORK

Find the scale factor and determine if the dilation is an enlargement or a reduction.
 Then, find the value of each variable by using properties of similar triangles.

1. Reduction $k = \frac{1}{2}$

2. Enlargement $k = 3$

3. Reduction $k = \frac{1}{3}$

4. Enlargement $k = 2$

5. Reduction $k = \frac{1}{5}$

6. Reduction $k = \frac{1}{2}$

7. Enlargement $k = 2$

8. Reduction $k = \frac{1}{2}$

9. Enlargement $k = 4$

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Geometry CC - Unit 7
 LESSON 8 : Mid-segments in a Triangle
 M2 L0

Mid-segment of a Triangle

The mid-segment of a triangle has 3 properties:

1. It is a segment joining the Midpoints of two sides of a triangle.
2. It is parallel to the third side of the triangle.
3. It is 1/2 the measure of the side that it doesn't intersect.

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Example: If \overline{ED} is a mid-segment, find the following:

- a) $m\overline{AD} = 10$
- b) $m\overline{DB} = 10$
- c) $m\overline{EC} = 7$
- d) $m\overline{AC} = 16$
- e) If $m\overline{ED} = 10$, what is $m\overline{CB}$? 20

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Find each indicated length for the problems below:

1. $x = 5.5$
 $y = 8$
 $z = 5$
2. $x = 15$
 $y = 10$
 $z = 6$

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3. In the diagram, $D, E,$ and F represent the midpoints of $\overline{AB}, \overline{BC},$ and \overline{AC} respectively. Fill in all the missing segment measures.

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4. $x = 27$
 $y = 27$
5. $x = 27$
 $y = 27$

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6. In the diagram, D , E , and F represent the midpoints of AB , BC , and AC respectively. Fill in all the missing segment and angle measures.

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7. In the diagram below of $\triangle ACT$, D is the midpoint of \overline{AC} , O is the midpoint of \overline{AT} , and G is the midpoint of \overline{CT} .

If $AC = 10$, $AT = 18$, and $CT = 22$, what is the perimeter of parallelogram CDOG?

$CDOG = 32$

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8. If the perimeter of a triangle is 80 ~~square~~ units, what is the perimeter of the triangle formed by its mid-segment?

$P_{\text{big red}} = 80 \text{ units}$
 $P_{\text{blue}} = 40 \text{ units}$

The Perimeter of the \triangle formed by the midsegments is $\frac{1}{2}$ the perimeter of the larger \triangle .

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9. If the perimeter of a triangle's mid-segment is 30 square units, what is the perimeter of the triangle?

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10. Each diagram below shows a triangle and its mid-segments. Find the indicated values.

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