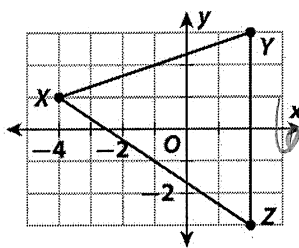
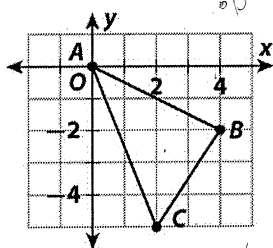


# Transformational Geometry

Use the two triangles for 1–8.



|   |  |
|---|--|
| <p>1. <math>\triangle ABC</math> is translated 2 units right and 1 unit down. What is the new location of point C?</p> <p>A (1, -7)                      C (2, -5)<br/>           B (1, -3)                      <b>D (4, -6)</b></p>   | <p>2. <math>\triangle ABC</math> is dilated using a scale factor of 2.5. Which property does <b>not</b> change?</p> <p>A side lengths<br/> <b>B angle measures</b><br/>           C area<br/>           D perimeter</p>  |
| <p>3. Which translation moves a triangle 4 units to the right and 8 units up? <math>y+8</math>    <math>x+4</math></p> <p><b>A</b> <math>(x, y) \rightarrow (x + 4, y + 8)</math><br/>           B <math>(x, y) \rightarrow (x - 4, y + 8)</math><br/>           C <math>(x, y) \rightarrow (x + 8, y + 4)</math><br/>           D <math>(x, y) \rightarrow (x + 8, y - 4)</math></p> | <p>4. <math>\triangle ABC</math> is reflected across the x-axis. What is the new location of point B?</p> <p>A (-4, -2)                      C (4, -2)<br/>           B (-4, 2)                      <b>D (4, 2)</b></p>   |
| <p>5. <math>\triangle ABC</math> is dilated using a scale factor of 2. What happens to its angle measures?</p> <p>A They double in size.<br/> <b>B They do not change.</b><br/>           C They become half as great.<br/>           D It depends on the center of the dilation.</p>   | <p>6. <math>\triangle ABC</math> is rotated <math>90^\circ</math> clockwise about the origin. In what quadrant is <math>\triangle A'B'C'</math>, the image of the original triangle?</p> <p>A Quadrant I<br/>           B Quadrant II<br/> <b>C Quadrant III</b><br/>           D Quadrant IV</p>      |
| <p>7. <math>\triangle ABC</math> is rotated <math>90^\circ</math> counterclockwise with the origin as center of rotation. Where is the image of point A?</p> <p>A (0, 0)                      C (2, -4)<br/>           B (4, -2)                      <b>D (2, 4)</b></p>   | <p>8. <math>\triangle XYZ</math> is dilated using a scale factor of 3. What is the length of <math>Y'Z'</math>?</p> <p>A 2                                      C 6<br/>           B 3                                      <b>D 18</b></p> <p style="text-align: center;"><math>6 \times 3</math></p> |

9. Which property changes when a figure is reflected across a line?

- A side lengths
- B angle measures
- C perimeter
- D orientation

10. Which property changes when a figure is translated?

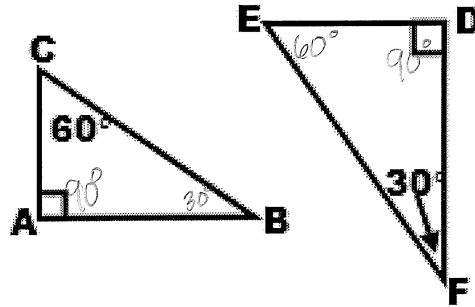
- A side lengths
- B angle measures
- C location
- D perimeter

11. What is the result of the transformation below?

$$(x, y) \rightarrow (-x, y)$$

- A reflection across the  $x$ -axis
- B reflection across the  $y$ -axis
- C  $90^\circ$  rotation clockwise
- D  $90^\circ$  rotation counterclockwise

12.  $\triangle ABC$  and  $\triangle DEF$  are pictured below.



Are the triangles similar? *yes*

*Corresponding angles are the same.*

13. Marcy glued 24 inches of ribbon around a picture of her family as shown below. If she chooses to enlarge the original picture by multiplying the dimensions by four, how much ribbon will it take to go around the enlarged picture?



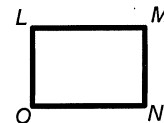
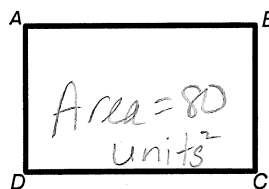
$$\text{Perimeter} = 24 \text{ in}$$

$$\text{Scale factor} = 4$$

$$24 \times 4 = 96$$

$$\boxed{96 \text{ inches}}$$

14. Rectangle  $ABCD$  and rectangle  $LMNO$  are similar. If the area of rectangle  $ABCD$  is  $80 \text{ units}^2$ , what is the area of rectangle  $LMNO$ ?



*not enough information;*

*need to know the scale factor.*