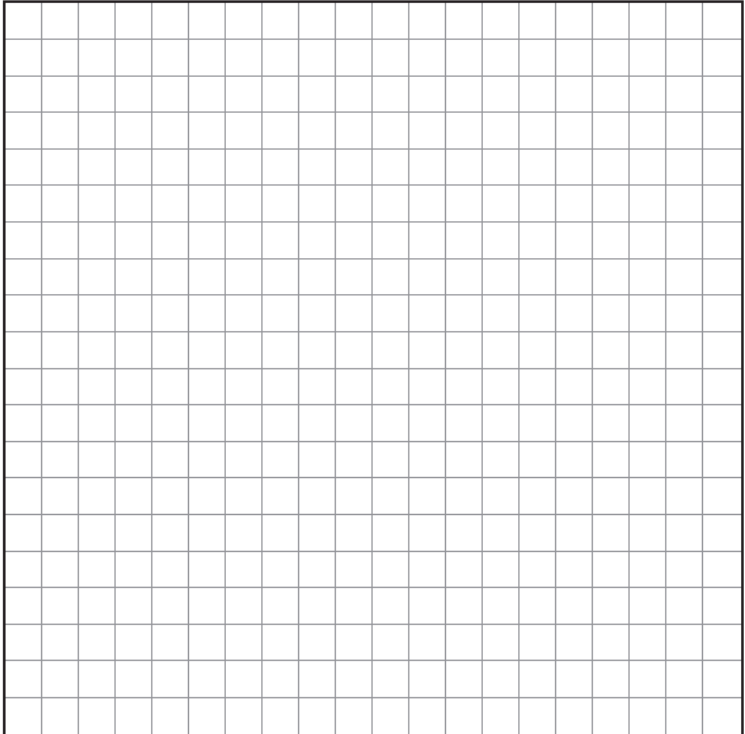


<p>1. Which of the following is not an isometry?</p> <p>(1) line reflection                      (3) dilation          (2) point reflection                    (4) rotation</p>	<p>2. Which of the following words has point symmetry?</p> <p>(1) pop                                      (3) mom          (2) pod                                      (4) oz</p>
<p>3. The image of the origin under a certain translation is the point <math>(2, -6)</math>. The image of point <math>(-3, -2)</math> under the same translation is the point</p> <p>(1) <math>(-1, -8)</math>                              (3) <math>(-\frac{3}{2}, \frac{1}{3})</math>          (2) <math>(-6, 12)</math>                              (4) <math>(-5, 4)</math></p>	<p>4. What are the coordinates of <math>r_{x=4} \circ r_{y=3}(2, 5)</math>?</p>
<p>5. Which of the following transformations could map the point <math>(1, 2)</math> onto the point <math>(3, 6)</math>?</p> <p>(1) <math>T_{2,3}</math>                                      (3) <math>D_3</math>          (2) <math>T_{3,2}</math>                                      (4) <math>r_{y=x}</math></p>	<p>6. If the point <math>(0, -4)</math> is rotated <math>90^\circ</math> clockwise about the origin, its image is on the line</p> <p>(1) <math>y = x</math>                                      (3) <math>x = 0</math>          (2) <math>y = -x</math>                                    (4) <math>y = 0</math></p>
<p>7. a) Sketch the graph of <math>\frac{(x-3)^2}{4} + \frac{(y+2)^2}{9} = 1</math></p> <p>b) Reflect the given graph in the <math>x</math>-axis and write its new equation.</p> <p>c) Translate the given graph by <math>T_{-4,6}</math> and state the new equation.</p>	

<p>8. Which transformation is an opposite isometry?  (1) dilation (3) rotation of <math>90^\circ</math>  (2) line reflection (4) translation</p>	<p>9. The composite transformation that reflects point <math>P</math> through the origin, the <math>x</math>-axis, and the line <math>y = x</math>, in the order given, is equivalent to which rotation?  (1) <math>R_{90^\circ}</math> (3) <math>R_{270^\circ}</math>  (2) <math>R_{180^\circ}</math> (4) <math>R_{360^\circ}</math></p>
<p>10. In which quadrant would the image of point <math>(4, 5)</math> fall after a dilation using a factor of <math>-3</math>?  (1) I (3) III  (2) II (4) IV</p>	<p>11. Which symbol has both point and line symmetry?  (1) ♣ (3) ♥  (2) ♦ (4) ♠</p>
<p>12. The centripetal force on an object moving in a circular path varies inversely as the radius of the circle. If a 55-pound force acts on an object traveling in a circular path with a radius of 10 feet, then what is the <i>diameter</i> of the circular path where the centripetal force acting on the object is 75 pounds?</p>	<p>13. What is the length of the major axis of the ellipse <math>36(x - 9)^2 + 9(y + 18)^2 = 324</math> ?</p>

14. a) On the accompanying grid, graph the equation  $2y = 2x^2 - 4$  in the interval  $-3 \leq x \leq 3$  and label it  $a$ .
- b) On the same grid, sketch the image of  $a$  under  $T_{5,-2} \circ r_{x\text{-axis}}$  and label it  $b$ .

