

Directions: Write the rule of the transformation.

- 1) A triangle ABC is translated 5 units left and 2 units up.

$$(x, y) \rightarrow (x-5, y+2)$$

- 2) A line segment \overline{DE} is translated 2 units right and 1 unit up.

$$(x, y) \rightarrow (x+2, y+1)$$

Directions: Describe the translation and find the image of $(-3, 7)$ under each transformation.

- 3) $(x, y) \rightarrow (x, y-3)$

TRANS 3 UNITS DOWN
 $(-3, 7) \rightarrow (-3, 4)$

- 4) $(x, y) \rightarrow (x-1, y-6)$

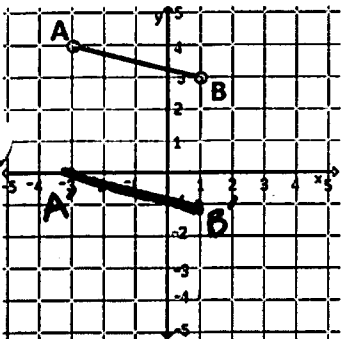
TRANS 1 UNIT LEFT, 6 UNITS DOWN
 $(-3, 7) \rightarrow (-4, 1)$

- 5) $(x, y) \rightarrow (x+3, y)$

TRANS 3 UNITS RIGHT
 $(-3, 7) \rightarrow (0, 7)$

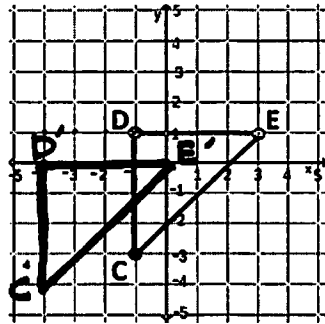
Directions: Complete the translation of the new image. If the rule was provided, describe the translation. If the translation was described, write the rule.

- 6) $\overline{AB}(x, y) \rightarrow \overline{A'B'}(x, y-4)$



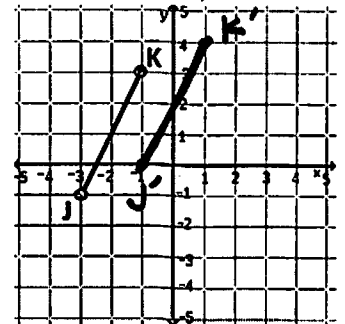
TRANS 4 UNITS DOWN

- 7) $\triangle CDE(x, y) \rightarrow \triangle C'D'E'(x-3, y-1)$



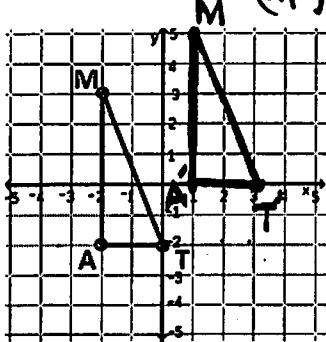
TRANS 3 LEFT + 1 DOWN

- 8) $\overline{JK}(x, y) \rightarrow \overline{J'K'}(x+2, y+1)$



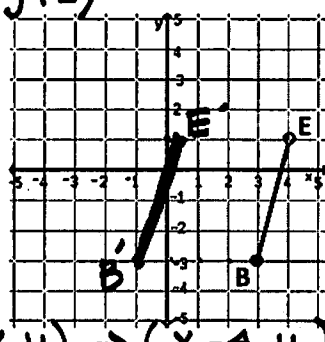
TRANS 2 RIGHT + 1 UP

- 9) Translate $\triangle MAT$ 3 units right & 2 units up.



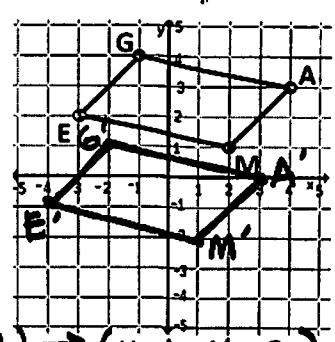
$$(x, y) \rightarrow (x+3, y+2)$$

- 10) Translate \overline{BE} 4 units left.



$$(x, y) \rightarrow (x-4, y)$$

- 11) Translate quadrilateral GAME Using $\langle -1, -3 \rangle$.



$$(x, y) \rightarrow (x-1, y-3)$$

Directions: Write the rule of the reflection.

- 12) A line segment is reflected over the y-axis.

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

- 13) A triangle is reflected over the x-axis.

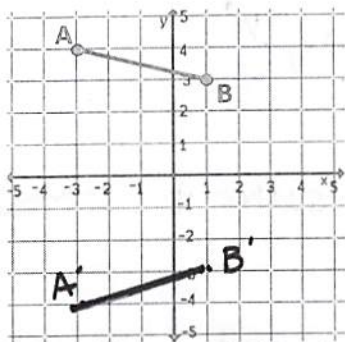
$$(x, y) \rightarrow (x, -y)$$

Directions: Describe the transformation and find the image of $(2, -4)$ under each transformation.

- $(x, y) \rightarrow (x, -y)$ REFLECTION OVER X-AXIS
 $(2, -4) \rightarrow (2, 4)$
- $(x, y) \rightarrow (x + 2, y)$ TRAN 2 RIGHT
 $(2, -4) \rightarrow (4, -4)$
- $(x, y) \rightarrow (-x, y)$ REFLECTION OVER Y-AXIS
 $(2, -4) \rightarrow (-2, -4)$
- $(x, y) \rightarrow (x - 4, y)$ TRAN 4 LEFT
 $(2, -4) \rightarrow (-2, -4)$
- $(x, y) \rightarrow (-x, y + 1)$ REFLECTION OVER Y-AXIS UP 1
 $(2, -4) \rightarrow (-2, -3)$
- $(x, y) \rightarrow (-x, -y)$ REFLECTION OVER X+Y AXIS
 $(2, -4) \rightarrow (-2, 4)$

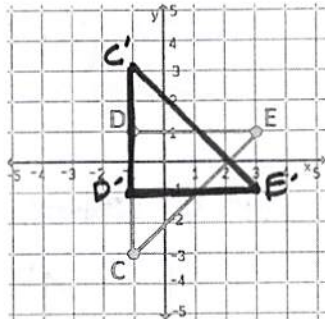
Directions: Complete the transformation of the new image. If the rule was provided, describe the transformation. If the transformation was described, write the rule.

20) $\overline{AB}(x, y) \rightarrow \overline{A'B'}(x, -y)$



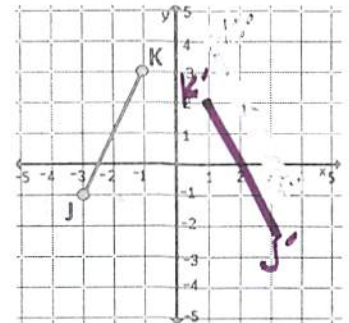
REFLECT OVER X-AXIS

21) $\triangle CDE(x, y) \rightarrow \triangle C'D'E'(x, -y)$



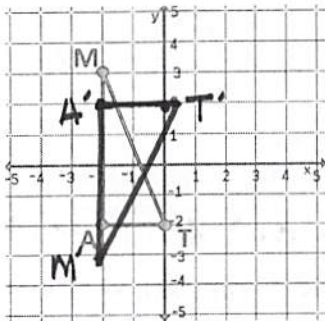
REFLECT OVER X-AXIS

22) $\overline{JK}(x, y) \rightarrow \overline{J'K'}(-x, y - 1)$



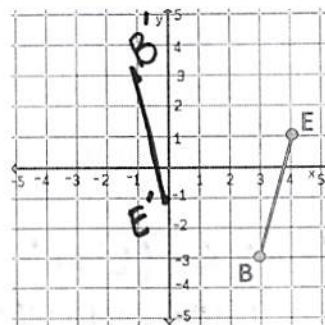
REFLECT OVER Y-AXIS
TRANSLATE 1

23) Reflect $\triangle MAT$ over $y = 0$.



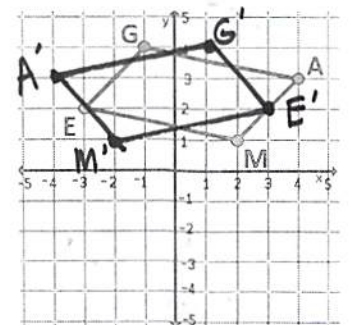
$(x, y) \rightarrow (x, -y)$

*24) Reflect \overline{BE} over the x-axis. Then, translate left 4 units.



$(x, y) \rightarrow (x - 4, -y)$

25) Reflect quad GAME over the y-axis.



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

26) If the result of $(x, y) \rightarrow (x - 1, y + 2)$ is $A'(-5, 2)$, what is the pre-image, or A?

$A(-4, 0)$

27) If the result of $(x, y) \rightarrow (-x, y)$ is $B'(-6, -1)$, what is the pre-image, or B?

$B(6, -1)$

Segment \overline{AB} is reflected over \overline{PQ} to produce $\overline{A'B'}$.

A) How is $\overline{AA'}$ related to \overline{PQ} ?

\overline{PQ} IS \perp BIS OF $\overline{AA'}$

B) How is $\overline{AA'}$ related to $\overline{BB'}$?

$\overline{AA'} \parallel \overline{BB'}$

