

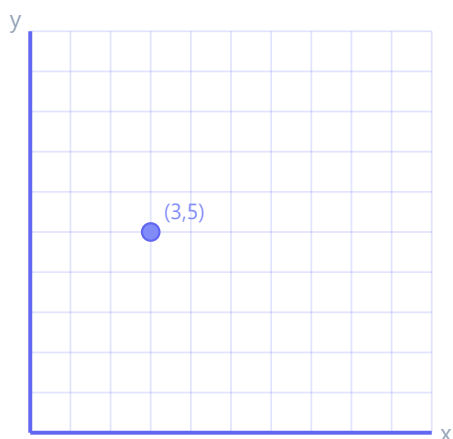
Rigid Transformations

Geometry · Grade 8

● Easy · 10 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

1. Point A is at $(3, 5)$. After a translation of $(x+2, y-3)$, where is A'?



Answer: _____

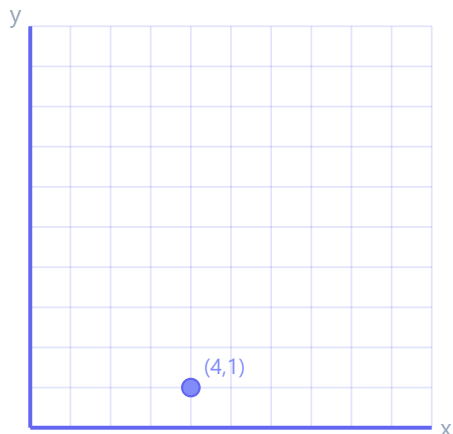
2. Point B is at $(-1, 4)$. Reflect it across the x-axis. Where is B'?

Answer: _____

3. Point C is at $(2, -3)$. Reflect it across the y-axis. Where is C'?

Answer: _____

4. Point D is at (4, 1). Rotate it 90° clockwise about the origin. Where is D'?



Answer: _____

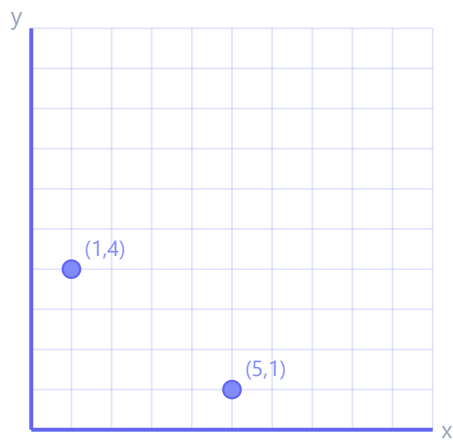
5. What type of transformation preserves size and shape?

Answer: _____

6. Point E is at $(-3, -2)$. Rotate it 180° about the origin. Where is E'?

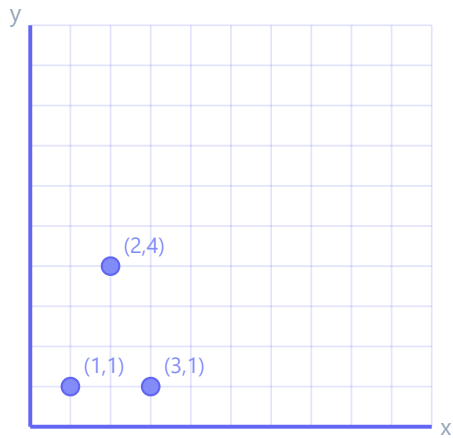
Answer: _____

7. Describe the translation that maps $(1, 4)$ to $(5, 1)$.



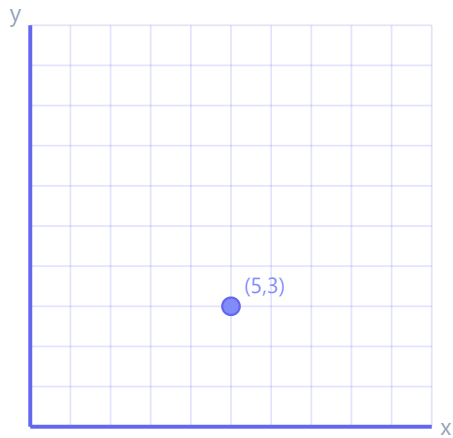
Answer: _____

8. Reflect triangle with vertices $(1,1)$, $(3,1)$, $(2,4)$ across the x-axis. Give the new vertices.



Answer: _____

9. Point F is at (5, 3). Rotate it 90° counterclockwise about the origin. Where is F'?



Answer: _____

10. A shape is translated 3 units left and 5 units up. Write the translation rule.

Answer: _____

Answer Key

Rigid Transformations — Easy

1. **(5, 2)**

Add 2 to x : $3+2=5$. Subtract 3 from y : $5-3=2$. $A'=(5,2)$.

2. **(-1, -4)**

Reflection across x -axis: $(x, y) \rightarrow (x, -y)$. $B'=(-1, -4)$.

3. **(-2, -3)**

Reflection across y -axis: $(x, y) \rightarrow (-x, y)$. $C'=(-2, -3)$.

4. **(1, -4)**

90° clockwise: $(x,y) \rightarrow (y,-x)$. $D'=(1, -4)$.

5. **Rigid transformation (isometry) — reflection, rotation, or translation.**

Rigid transformations keep distances and angles the same. Examples: translation, rotation, reflection.

6. **(3, 2)**

180° rotation: $(x,y) \rightarrow (-x,-y)$. $E'=(3,2)$.

7. **($x+4$, $y-3$)**

x : $5-1=+4$. y : $1-4=-3$. Translation: 4 right, 3 down.

8. **(1,-1), (3,-1), (2,-4)**

Negate all y -values: $(1,1) \rightarrow (1,-1)$, $(3,1) \rightarrow (3,-1)$, $(2,4) \rightarrow (2,-4)$.

9. **(-3, 5)**

90° CCW: $(x,y) \rightarrow (-y,x)$. $F'=(-3,5)$.

10. **($x-3$, $y+5$)**

Left = subtract from x . Up = add to y . Rule: $(x-3, y+5)$.