## 1.

What are the three isometric transformations?
2.

What does a translation do to a figure?
5.

Give the new coordinates of the image given the rule
$(x, y) \rightarrow(x-3, y+1)$

A(2, 3)
$B(5,8)$
7.

Explain the rule in words.
$(x, y) \rightarrow(x-1, y)$
3.

What does a reflection do to a figure?

## 6.

Give the new coordinates of the image given the rule
$(x, y) \rightarrow(-x, y)$
A(2, 3)
$B(5,8)$
8.

Explain the rule in words.
$(x, y) \rightarrow(x,-y)$
9.

Explain the rule in words.
$(x, y) \rightarrow(-x, y)$

## 12.

Write the rule.

10.

Write the rule.

13.

Graph using the rule. $(x, y) \rightarrow(x+4, y-3)$

11. Graph using the rule.
$(x, y) \rightarrow(x-3, y+2)$

14.

Write the rule.

15.

Graph using the rule.
$(x, y) \rightarrow(x,-y)$

18.

Write the rule.

16.

Write the rule.

19.

Graph using the rule.
Reflect over $x=1$

17.

Graph using the rule.
Reflect over $\mathrm{y}=2$

20.

Write the rule.

21.

Graph using the rule. $(x, y) \rightarrow(y,-x)$

24.

Write the rule.

22.

Write the rule.

25.

Graph using the rule. Rotate $90^{\circ} \mathrm{CW}$

23.

Graph using the rule.
Rotate $180^{\circ}$

26.

Write the rule.


## 27.

Graph using the rule.
Rotate $90^{\circ} \mathrm{CCW}$

30.

Write the rule and type of transformation using the image and pre-image's coordinates.

$$
\begin{aligned}
& A(2,3) \rightarrow A^{\prime}(-2,3) \\
& B^{\prime}(-1,4) \rightarrow B^{\prime}(1,4) \\
& C^{\prime}(0,2) \rightarrow C^{\prime}(0,2)
\end{aligned}
$$

28. 

Write the rule and type of transformation using the image and pre-image's coordinates.
$A(2,3) \rightarrow A^{\prime}(4,2)$
$B^{\prime}(-1,4) \rightarrow B^{\prime}(1,3)$
$C^{\prime}(0,2) \rightarrow C^{\prime}(2,1)$

## 31.

Graph using the rule.
Rotate $270^{\circ} \mathrm{CW}$

29.

Graph using the rule.
Rotate $180^{\circ}$

32.

Write the rule and type of transformation using the image and pre-image's coordinates.
$A(2,3) \rightarrow A^{\prime}(3,-2)$
$B^{\prime}(-1,4) \rightarrow B^{\prime}(4,1)$
$\mathrm{C}^{\prime}(0,2) \rightarrow \mathrm{C}^{\prime}(2,0)$

