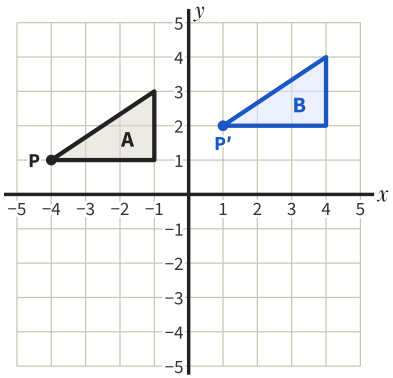
Translating shapes

ANSWERS

1

Translate A by the vector $\begin{pmatrix} 5 \\ 1 \end{pmatrix}$.

Label the image B. The cross shows where P lands.



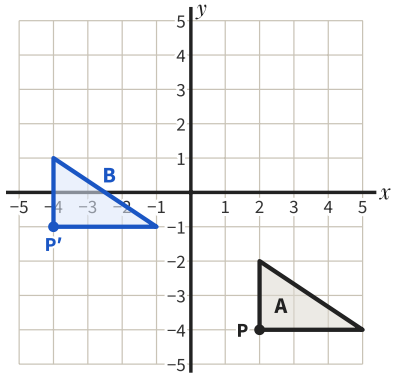
(1, 2)

P′ _____

2

Translate A by the vector $\begin{pmatrix} -6 \\ 3 \end{pmatrix}$.

Label the image B.



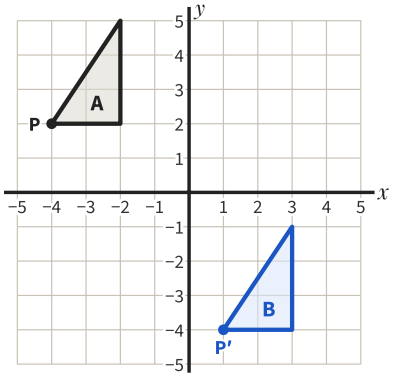
(−4, −1)

P′ _____

3

Translate A by the vector $\begin{pmatrix} 5 \\ -6 \end{pmatrix}$.

Label the image B.



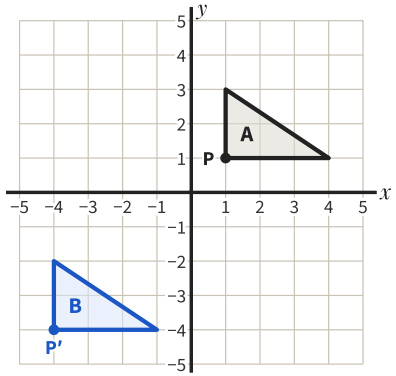
(1, −4)

P′ _____

4

Translate A by the vector $\begin{pmatrix} -5 \\ -5 \end{pmatrix}$.

Label the image B.



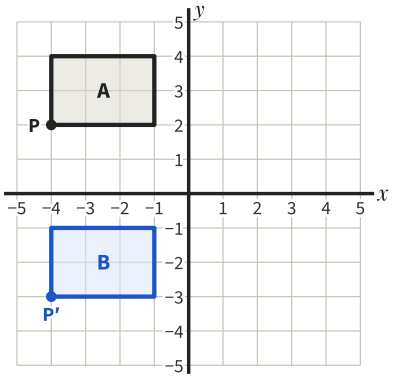
(−4, −4)

P′ _____

5

Translate A by the vector $\begin{pmatrix} 0 \\ -5 \end{pmatrix}$.

Label the image B.



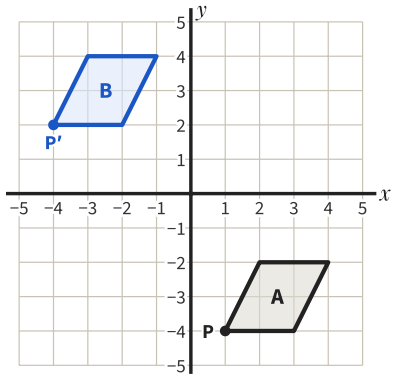
(−4, −3)

P′ _____

6

Translate A by the vector $\begin{pmatrix} -5 \\ 6 \end{pmatrix}$.

Label the image B.



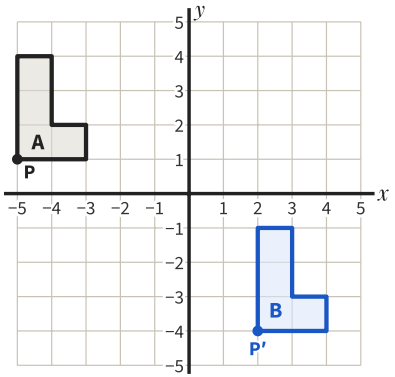
(−4, 2)

P′ _____

7

Translate A by the vector $\begin{pmatrix} 7 \\ -5 \end{pmatrix}$.

Label the image B.



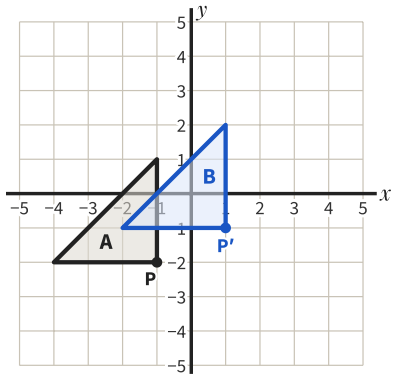
(2, −4)

P′ _____

8

Translate A by the vector $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$.

Label the image B.



(1, −1)

P′ _____

Translating shapes *further practice*

ANSWERS

9

The point (4, −1) is translated by the vector $\begin{pmatrix} -6 \\ 3 \end{pmatrix}$. Write down the coordinates of its image.

6 left, 3 up

4 − 6 = −2, −1 + 3 = 2

Answer *(−2, 2)*

10

A shape moves 2 squares left and 7 squares down. Write this as a column vector.

left is negative, down is negative

Answer $\begin{pmatrix} -2 \\ -7 \end{pmatrix}$

11

Describe the movement given by the column vector $\begin{pmatrix} 0 \\ -4 \end{pmatrix}$.

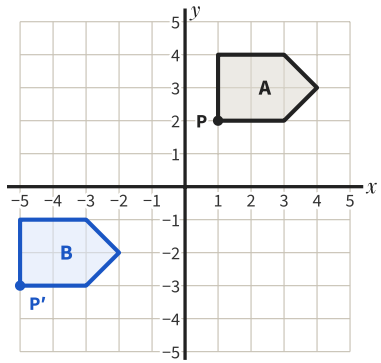
top 0: no move across

bottom −4: 4 down

Answer *4 squares down*

12

Translate A by the vector $\begin{pmatrix} -6 \\ -5 \end{pmatrix}$.
Label the image B.



P' *(−5, −3)*

13

A counter on a board game grid starts at (−3, 2). It moves by $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$, then by $\begin{pmatrix} -1 \\ 6 \end{pmatrix}$. Where does it finish?

after the first move: (2, −2)

then 1 left, 6 up

Answer *(1, 4)*

14

Shape A is 2 squares wide.
Ana translates it by $\begin{pmatrix} 6 \\ 0 \end{pmatrix}$. She leaves a gap of 6 squares between A and her image. Explain her mistake.
How big should the gap be?

every corner moves 6, not the gap

6 − 2 = 4

Answer *4 squares*

15

Leo translates the point (3, −2) by the vector $\begin{pmatrix} -5 \\ 1 \end{pmatrix}$. He gets (8, −1).
What did he do wrong? Write down the correct image.

−5 means 5 left, he went 5 right

3 − 5 = −2

Answer *(−2, −1)*

16

Mia says a translated shape always faces the same way as the shape it came from. Is she right? Explain.

every point moves the same distance

in the same direction, so no turn or flip

Answer *Yes*