

## Translation - Worksheet

### Skill

#### Group A - translations positive

Translate the shaded shape by the vector:

1)

$$\begin{pmatrix} 2 \\ 1 \end{pmatrix}$$



2)

$$\begin{pmatrix} 2 \\ 3 \end{pmatrix}$$



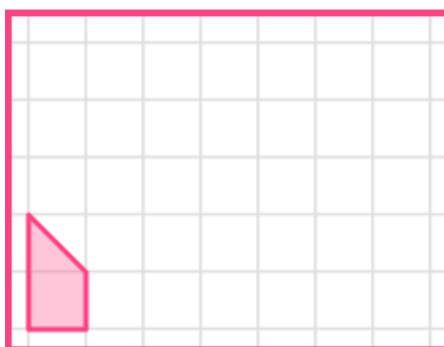
3)

$$\begin{pmatrix} 6 \\ 2 \end{pmatrix}$$



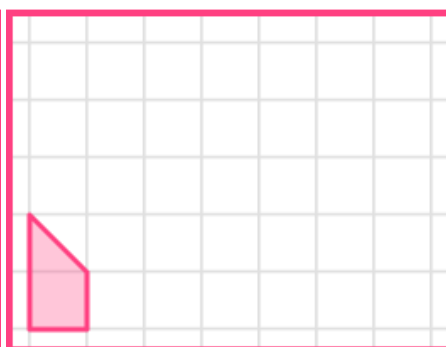
4)

$$\begin{pmatrix} 2 \\ 1 \end{pmatrix}$$



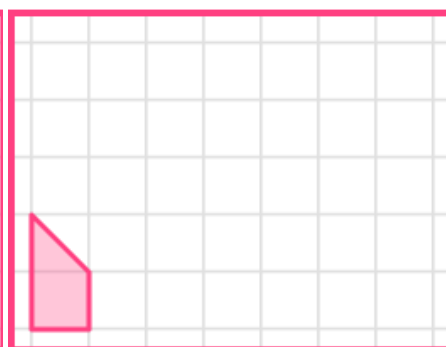
5)

$$\begin{pmatrix} 2 \\ 3 \end{pmatrix}$$



6)

$$\begin{pmatrix} 6 \\ 2 \end{pmatrix}$$

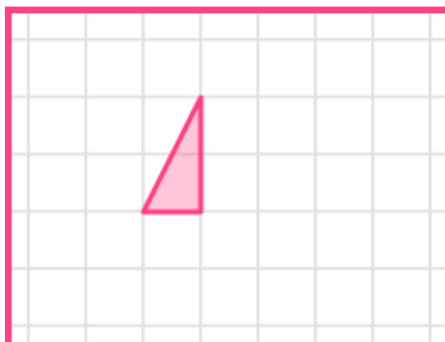


### Group B - translations positive and negative

Translate the shaded shape by the vector:

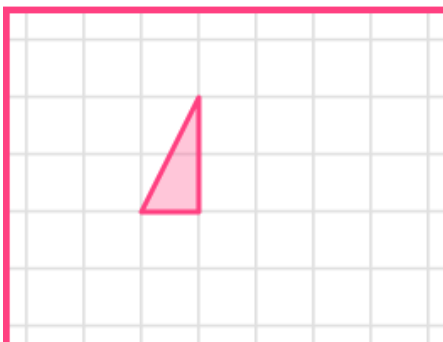
1)

$$\begin{pmatrix} 3 \\ -1 \end{pmatrix}$$



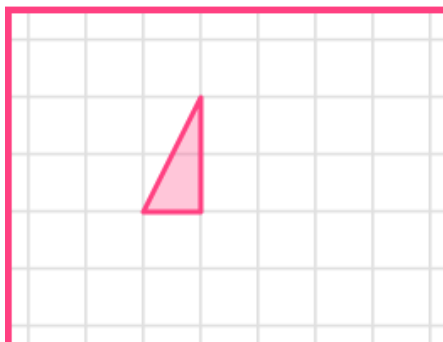
2)

$$\begin{pmatrix} -2 \\ -1 \end{pmatrix}$$



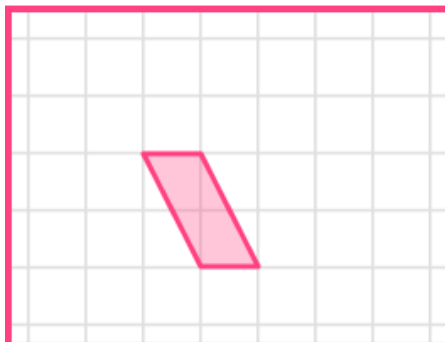
3)

$$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$$



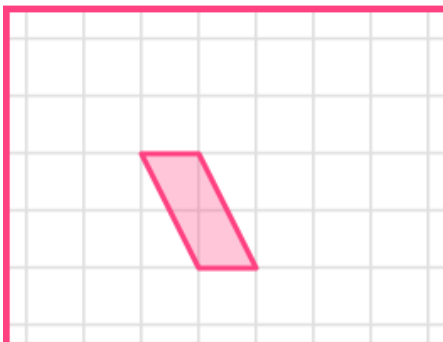
4)

$$\begin{pmatrix} 3 \\ -1 \end{pmatrix}$$



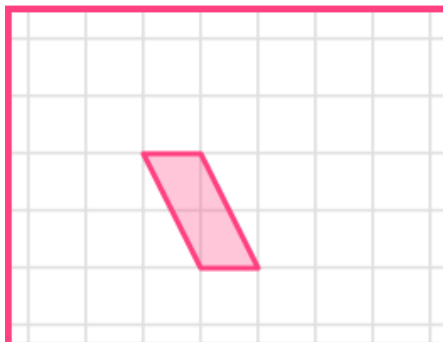
5)

$$\begin{pmatrix} -2 \\ -1 \end{pmatrix}$$



6)

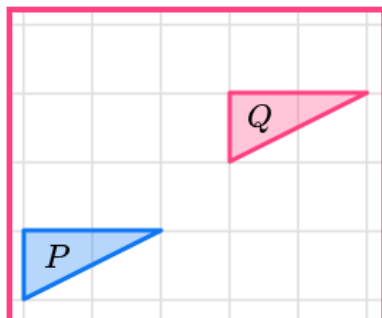
$$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$$



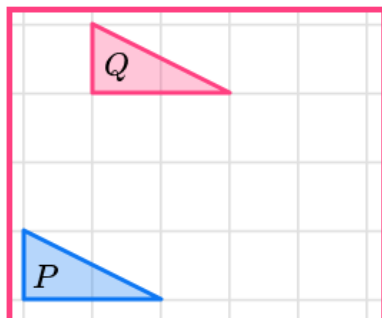
### Group C - Column vectors

What is the vector for the translation of shape  $P$  to shape  $Q$ ?

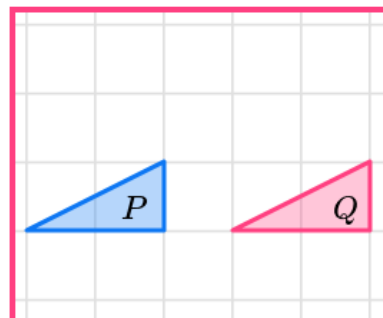
1)



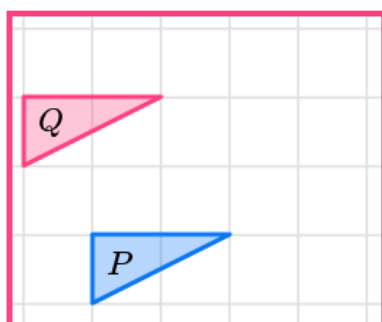
2)



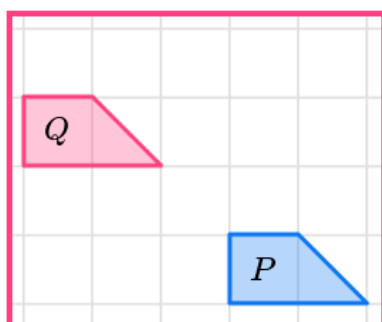
3)



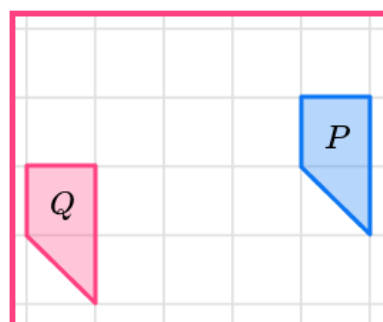
4)



5)



6)



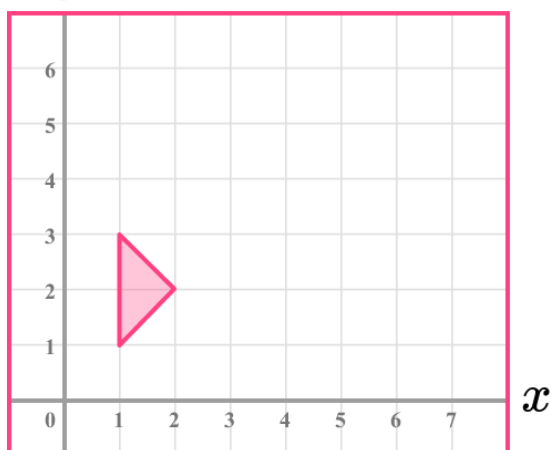
## Translations - Worksheet

### Applied

- 1) a) Translate the shaded shape by the vector

$$\begin{pmatrix} 4 \\ 1 \end{pmatrix}$$

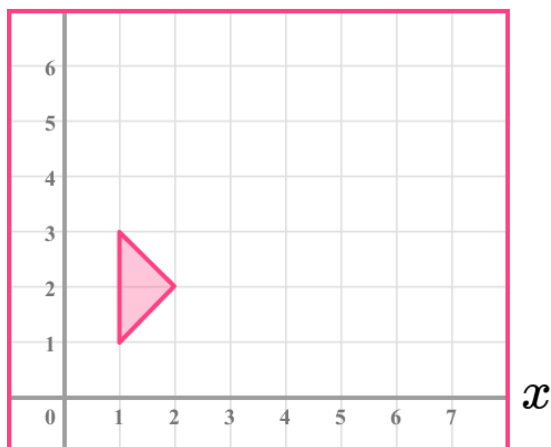
$y$



- b) Translate the shaded shape by the vector

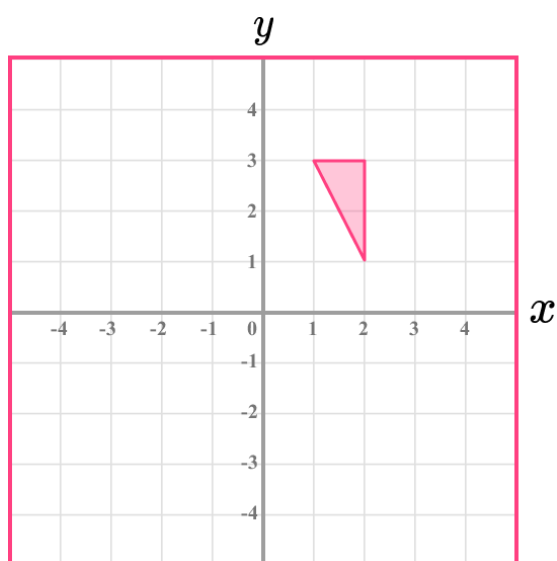
$$\begin{pmatrix} 3 \\ 2 \end{pmatrix}$$

$y$



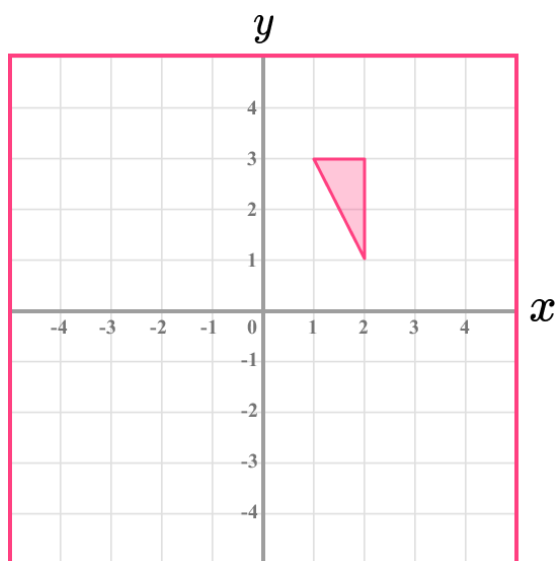
- 2) a) Translate the shaded shape by the vector

$$\begin{pmatrix} 2 \\ -4 \end{pmatrix}$$

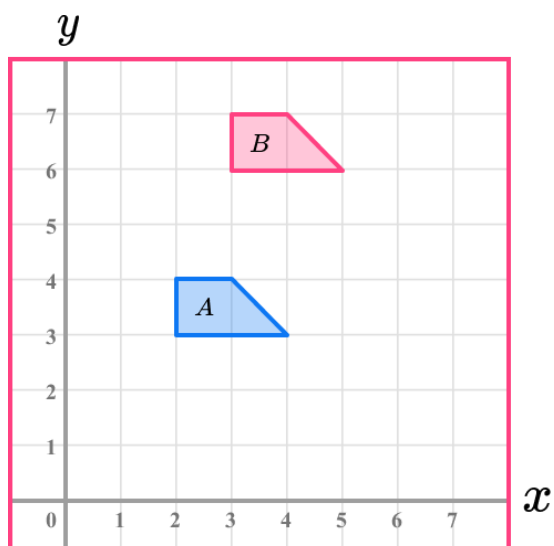


- b) Translate the shaded shape by the vector

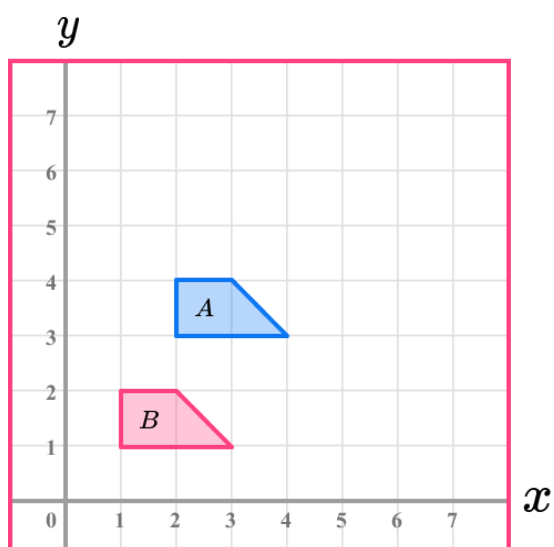
$$\begin{pmatrix} -4 \\ -2 \end{pmatrix}$$



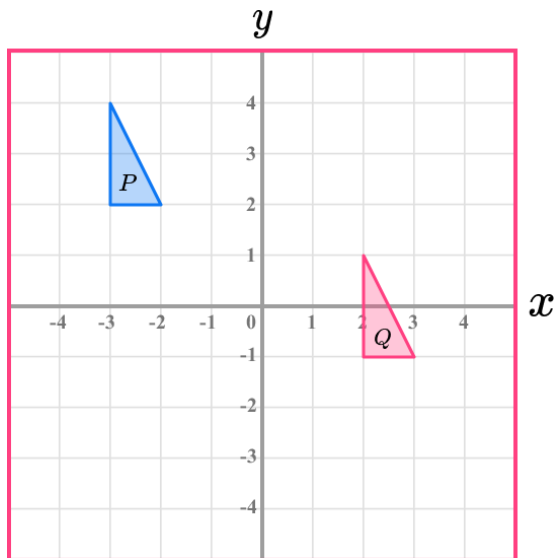
- 3) a) What is the vector for the translation of shape  $A$  to shape  $B$ ?



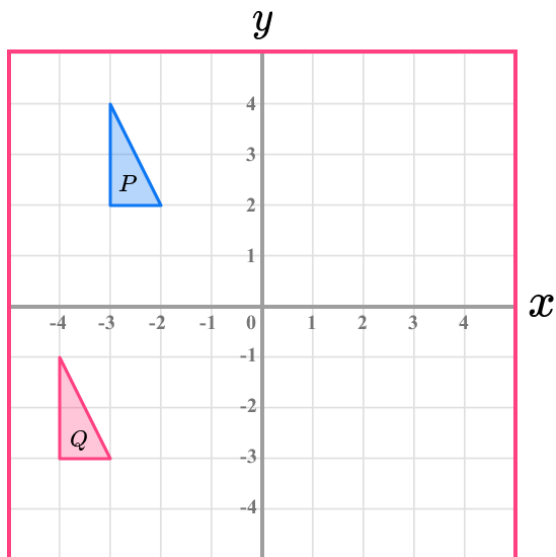
- b) What is the vector for the translation of shape  $A$  to shape  $B$ ?



- 4) a) What is the vector for the translation of shape  $P$  to shape  $Q$ ?



- b) What is the vector for the translation of shape  $P$  to shape  $Q$ ?



## Translations - Exam Questions

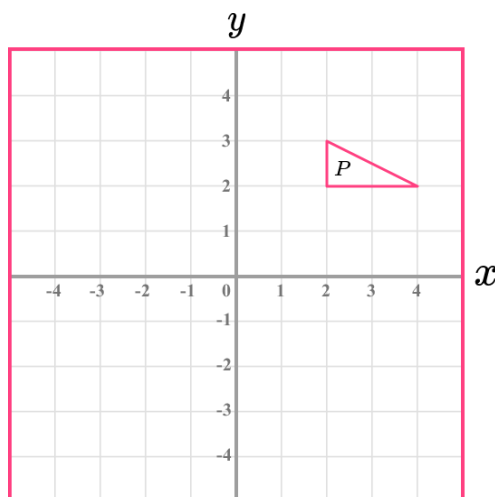
- 1) A shape is translated by the vector  $\begin{pmatrix} -5 \\ 0 \end{pmatrix}$  In which direction does the shape move? Circle your answer. ....  
(1 mark)

$$\begin{pmatrix} -5 \\ 0 \end{pmatrix}$$

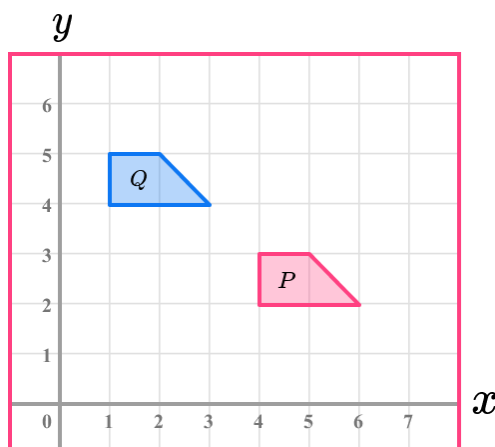
up down left right

- 2) Translate triangle A by the vector  $\begin{pmatrix} -5 \\ -1 \end{pmatrix}$  .....  
(2 marks)

$$\begin{pmatrix} -5 \\ -1 \end{pmatrix}$$

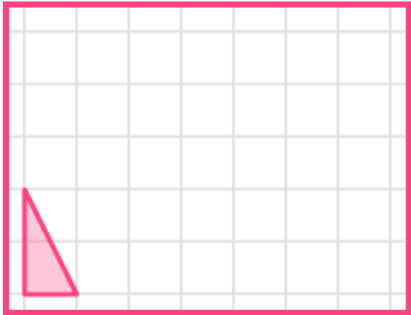
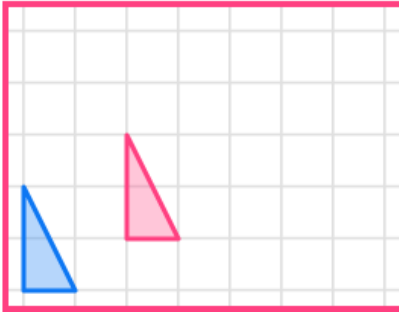
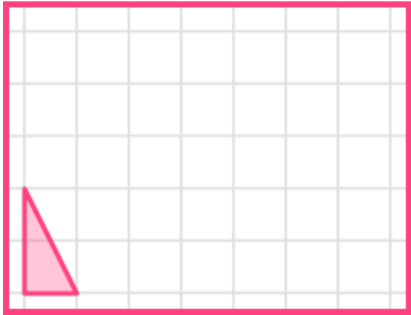
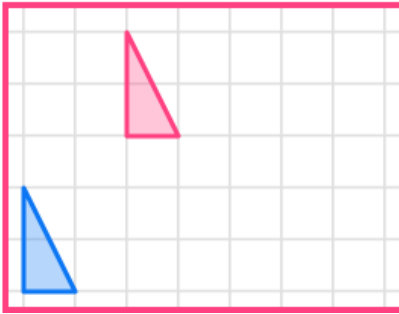
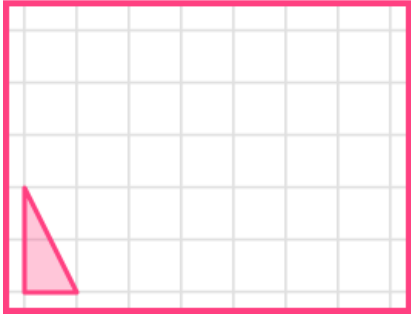
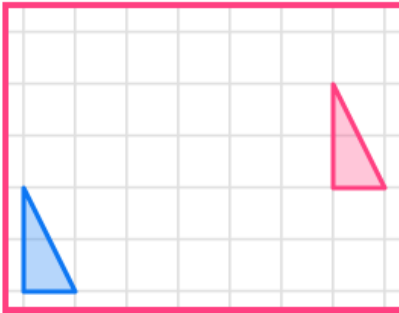


- 3) Describe the single transformation that maps Shape P onto shape Q. ....  
(2 marks)



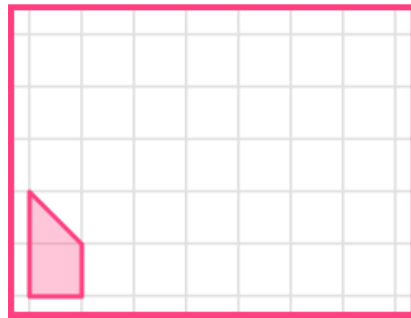


## Translations - Answers

	Question	Answer
Group A	Skill Questions	
	<p>Translate the shaded shape using the vector:</p> <p>1)</p> $\begin{pmatrix} 2 \\ 1 \end{pmatrix}$ 	<p>1)</p> 
	<p>2)</p> $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$ 	<p>2)</p> 
	<p>3)</p> $\begin{pmatrix} 6 \\ 2 \end{pmatrix}$ 	<p>3)</p> 

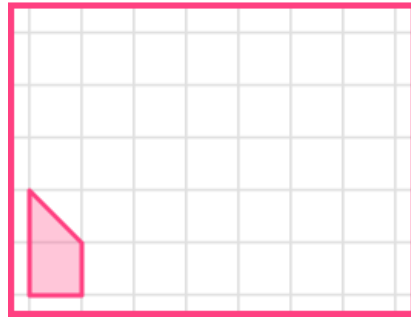
4)

$$\begin{pmatrix} 2 \\ 1 \end{pmatrix}$$



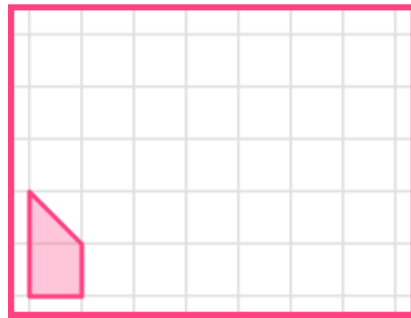
5)

$$\begin{pmatrix} 2 \\ 3 \end{pmatrix}$$

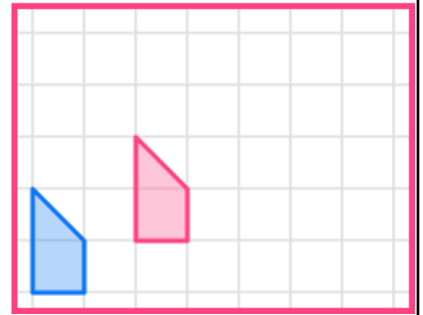


6)

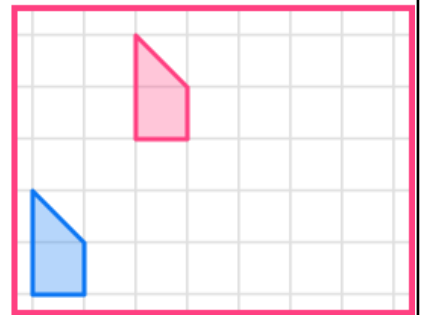
$$\begin{pmatrix} 6 \\ 2 \end{pmatrix}$$



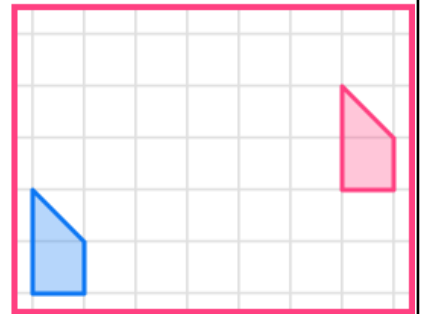
4)



5)



6)

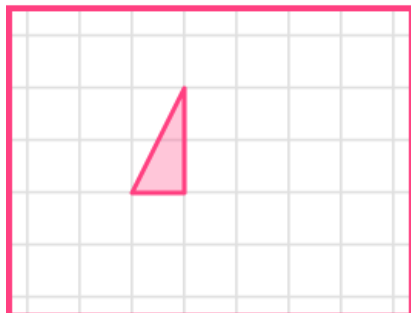


Group B

Translate the shaded shape using the vector:

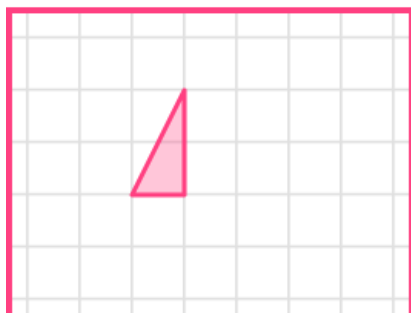
1)

$$\begin{pmatrix} 3 \\ -1 \end{pmatrix}$$



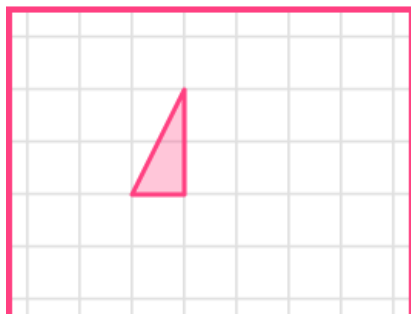
2)

$$\begin{pmatrix} -2 \\ -1 \end{pmatrix}$$



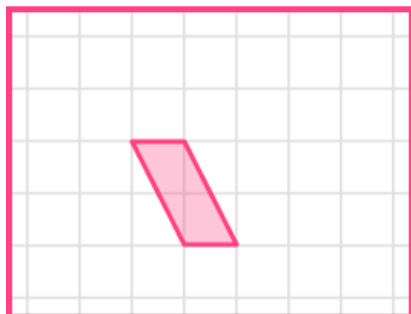
3)

$$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$$

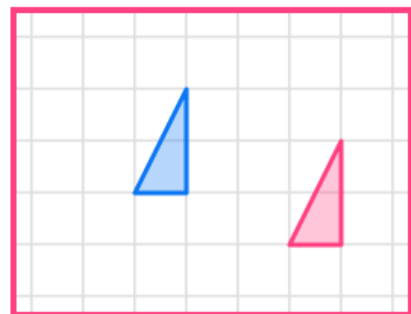


4)

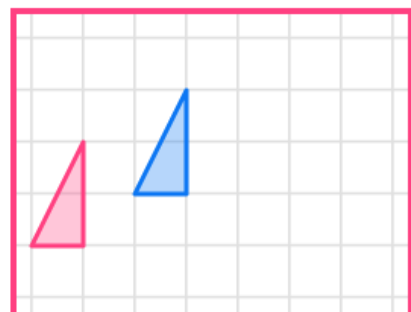
$$\begin{pmatrix} 3 \\ -1 \end{pmatrix}$$



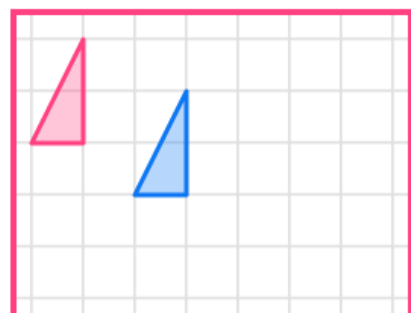
1)



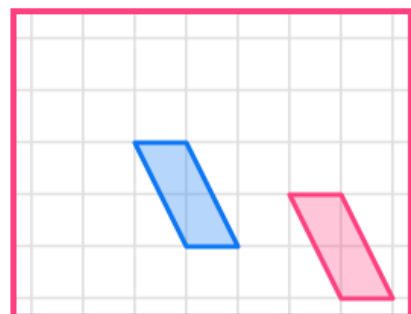
2)



3)

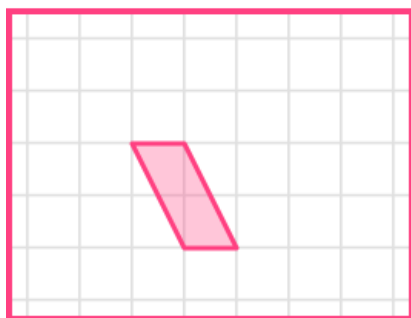


4)



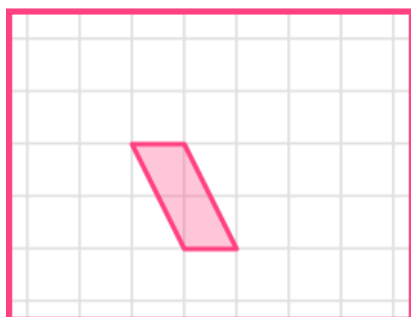
5)

$$\begin{pmatrix} -2 \\ -1 \end{pmatrix}$$

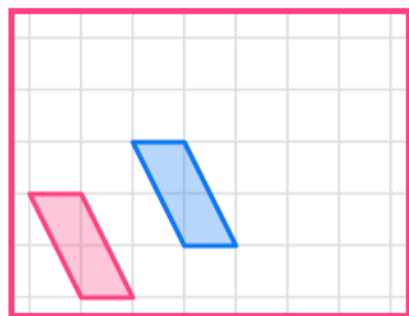


6)

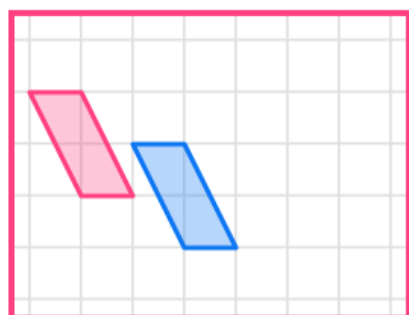
$$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$$



5)



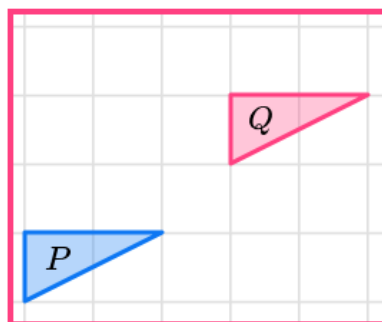
6)



Group C

What is the vector for the translation of shape P to shape Q?

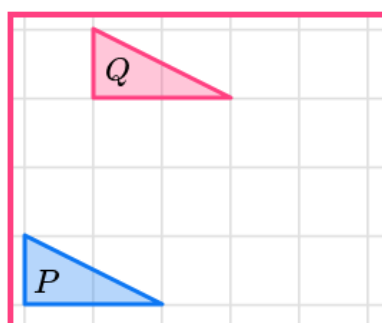
1)



1)

$$\begin{pmatrix} 3 \\ 2 \end{pmatrix}$$

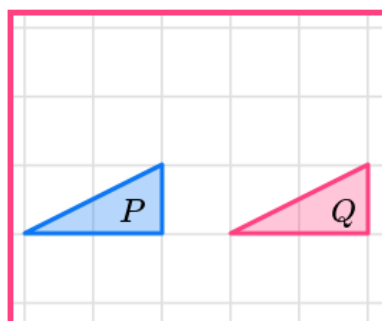
2)



2)

$$\begin{pmatrix} 1 \\ 3 \end{pmatrix}$$

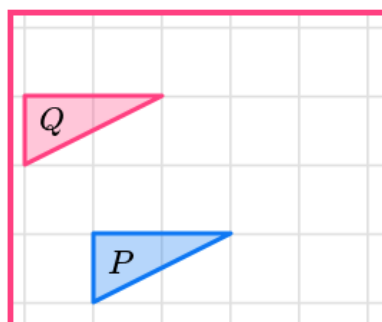
3)



3)

$$\begin{pmatrix} 3 \\ 0 \end{pmatrix}$$

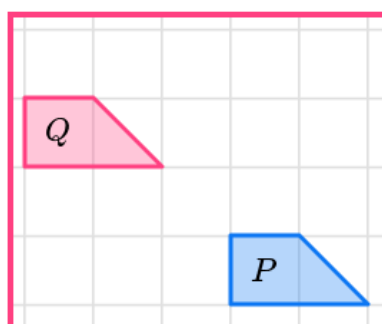
4)



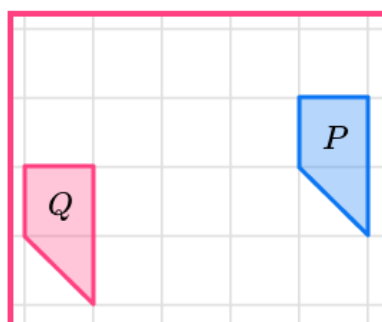
4)

$$\begin{pmatrix} -1 \\ 2 \end{pmatrix}$$

5)



6)



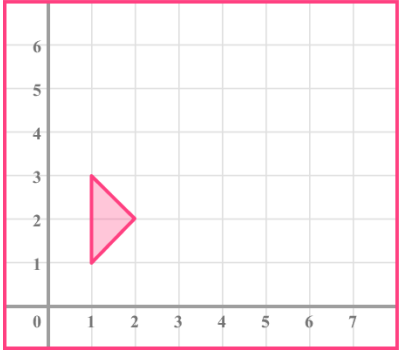
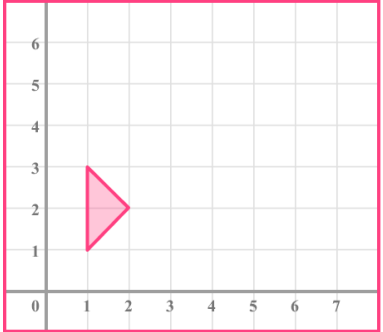
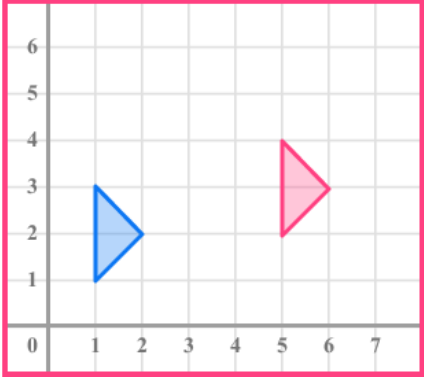
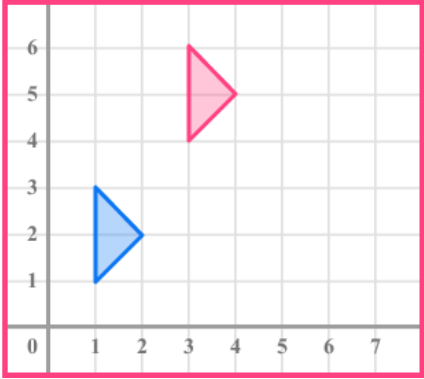
5)

$$\begin{pmatrix} -3 \\ 2 \end{pmatrix}$$

6)

$$\begin{pmatrix} -4 \\ -1 \end{pmatrix}$$

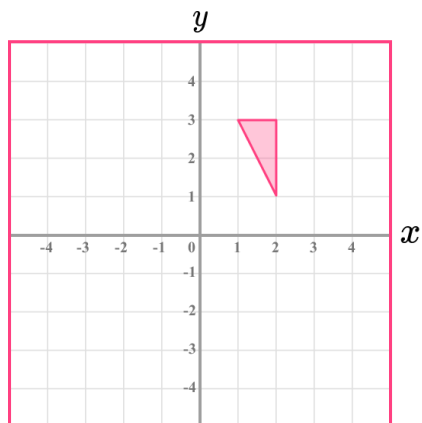
# Translations - Answers

	Question	Answer
	Applied Questions	
1)	<p>a) Translate the shaded shape using the vector</p> $\begin{pmatrix} 4 \\ 1 \end{pmatrix}$ <p><math>y</math></p>  <p><math>x</math></p> <p>b) Translate the shaded shape using the vector</p> $\begin{pmatrix} 3 \\ 2 \end{pmatrix}$ <p><math>y</math></p>  <p><math>x</math></p>	<p>a)</p>  <p>b)</p> 

2)

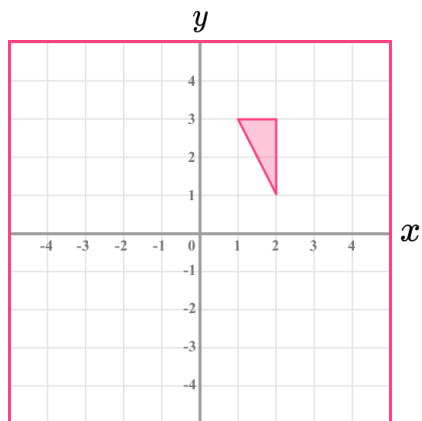
a) Translate the shaded shape using the vector

$$\begin{pmatrix} 2 \\ -4 \end{pmatrix}$$

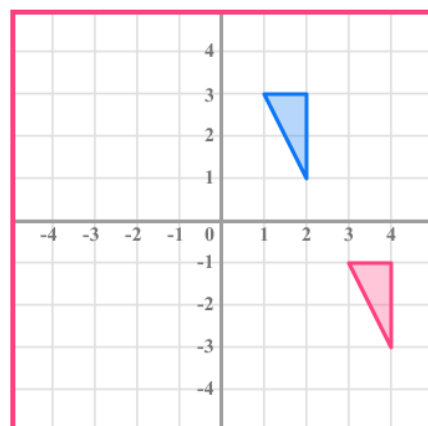


b) Translate the shaded shape using the vector

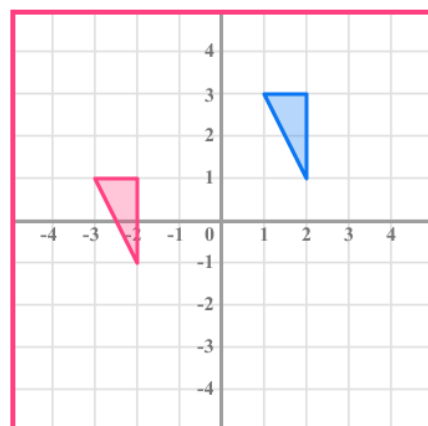
$$\begin{pmatrix} -4 \\ -2 \end{pmatrix}$$



a)

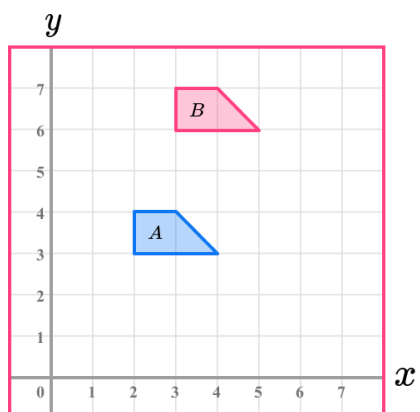


b)



3)

a) What is the vector for the translation of shape A to shape B?

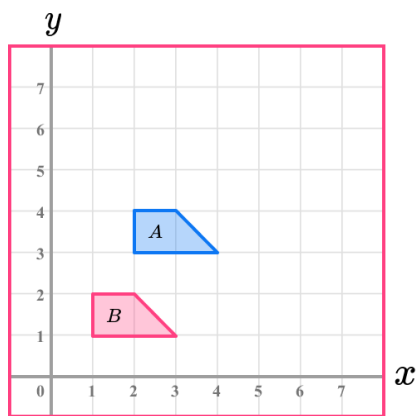


a)

$$\begin{pmatrix} 1 \\ 3 \end{pmatrix}$$

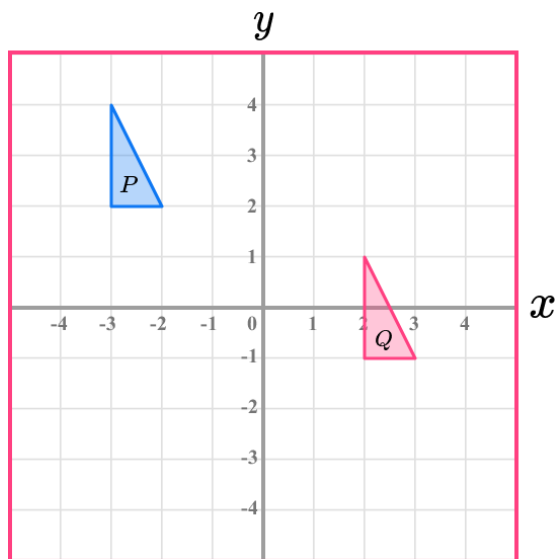


b) What is the vector for the translation of shape *A* to shape *B*?



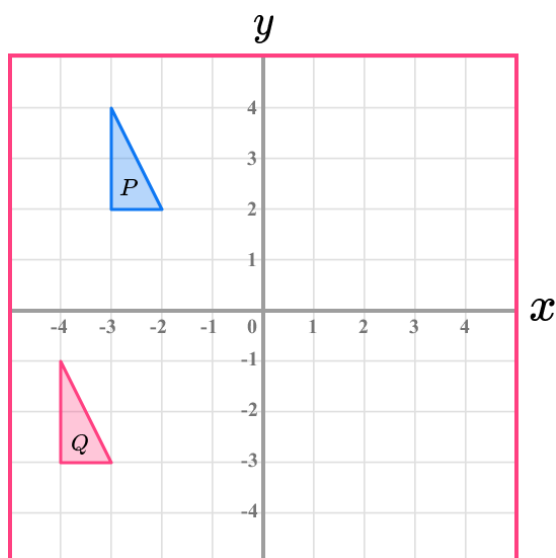
b)  $\begin{pmatrix} -1 \\ -2 \end{pmatrix}$

4) a) What is the vector for the translation of shape *P* to shape *Q*?



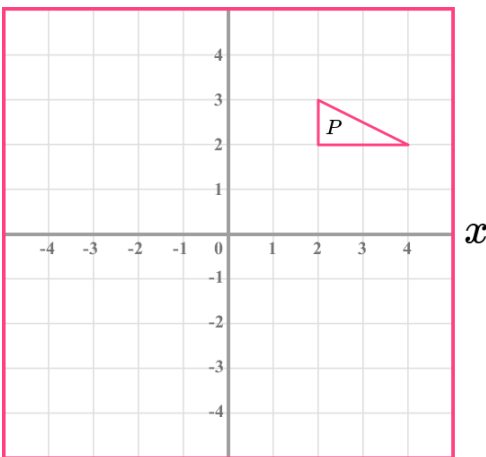
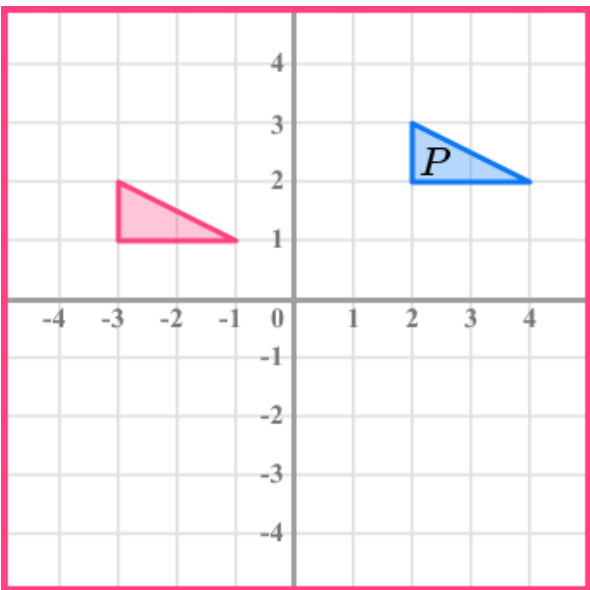
a)  $\begin{pmatrix} 5 \\ -3 \end{pmatrix}$

b) What is the vector for the translation of shape *P* to shape *Q*?



b)  $\begin{pmatrix} -1 \\ -5 \end{pmatrix}$

## Translations - Answers

	Question	Answer
	Exam Questions	
1)	<p>A shape is translated by the vector</p> $\begin{pmatrix} -5 \\ 0 \end{pmatrix}$ <p>In which direction does the shape move? Circle your answer. up   down   left   right</p>	<p>Right (1)</p>
2)	<p>Translate triangle A by the vector</p> $\begin{pmatrix} -5 \\ -1 \end{pmatrix}$ 	<p>(2)</p>  <p>For a translation (1)</p> <p>For the correct translation (1)</p>

3)	<p>Describe the single transformation that maps Shape <b>P</b> onto shape <b>Q</b>.</p>	<p>Translation <b>(1)</b></p> $\begin{pmatrix} -3 \\ 2 \end{pmatrix} \quad \mathbf{(1)}$	<b>(2)</b>
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