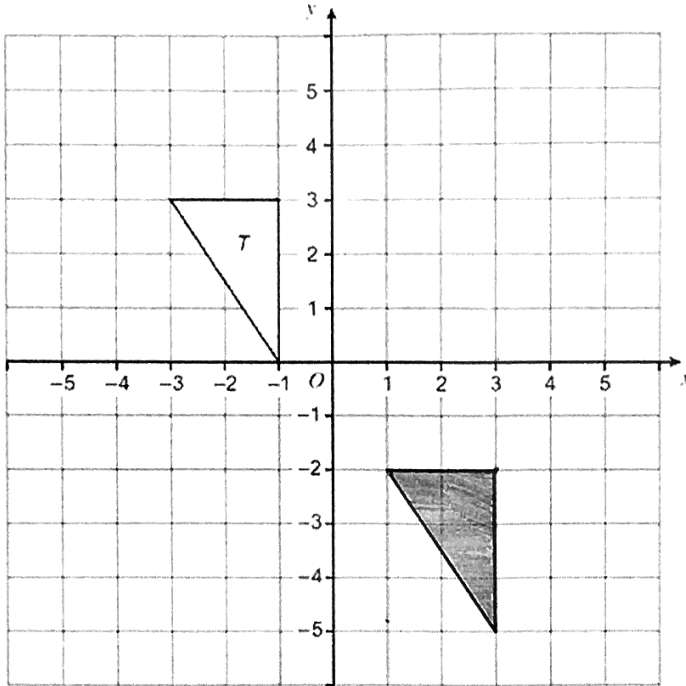
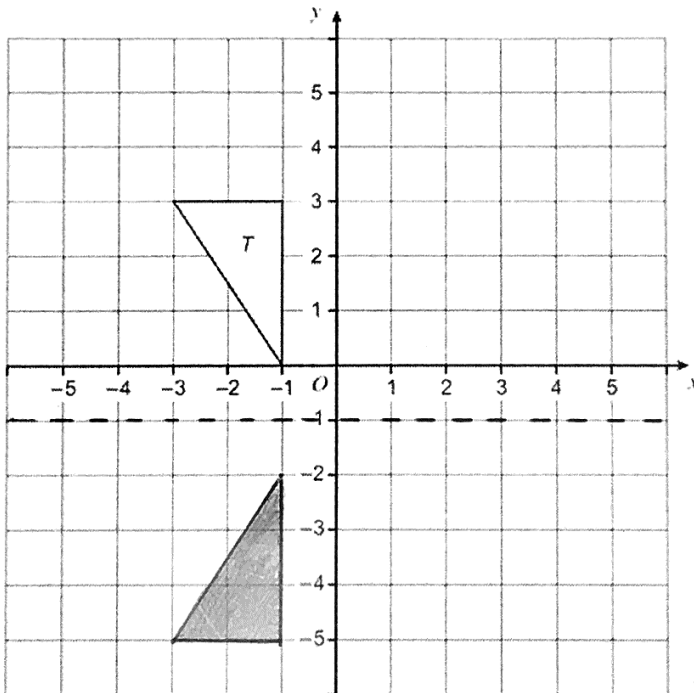


- 1) (a) Translate triangle  $T$  by the vector  $\begin{pmatrix} 4 \\ -5 \end{pmatrix}$



(2)

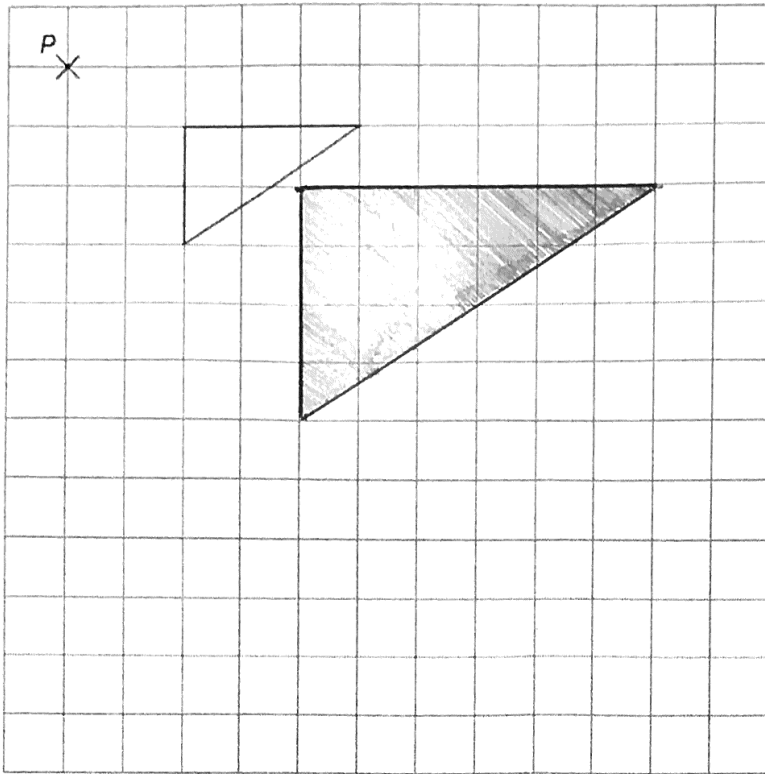
- (b) Reflect triangle  $T$  in the line  $y = -1$



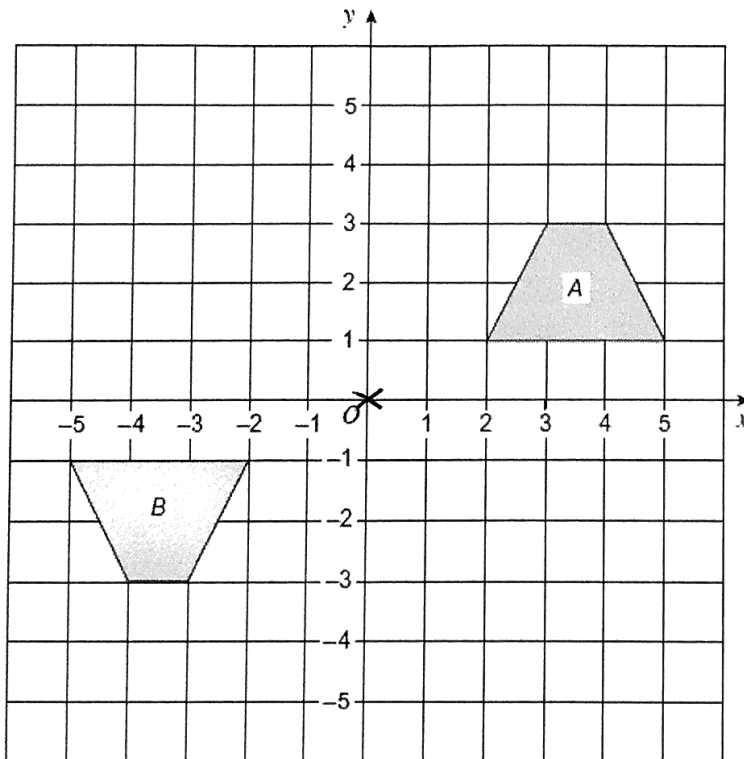
(2)

(Total 4 marks)

- 2) (a) Enlarge this shape by scale factor 2 with centre of enlargement point  $P$ .



- (b) Describe fully the **single** transformation that maps shape  $A$  to shape  $B$ . (3)



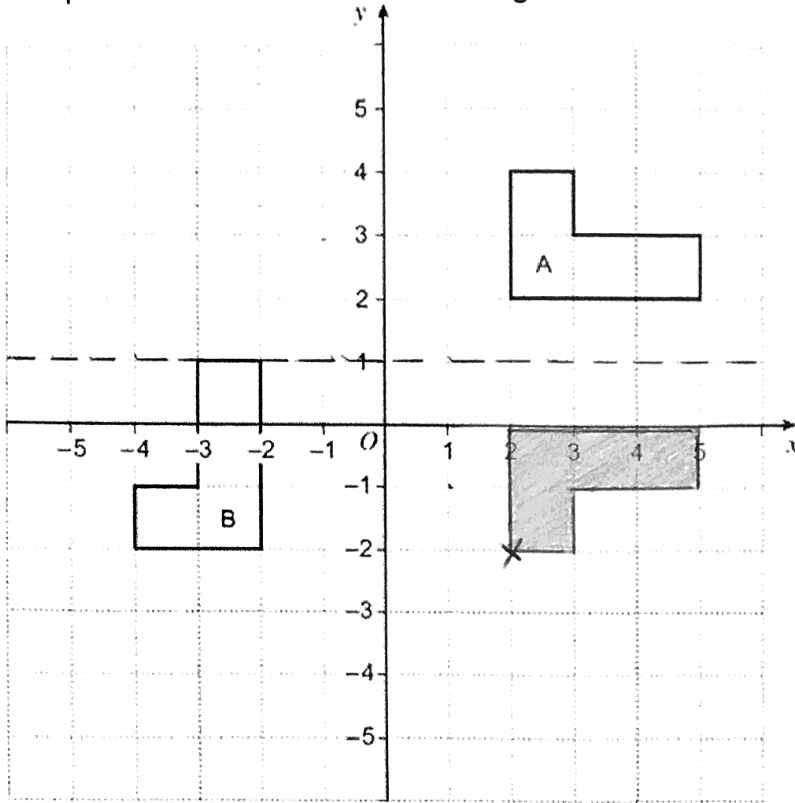
..... Rotated  $180^\circ$  about  $(0, 0)$  .....

.....

.....

(3)  
(Total 6 marks)

3) Shapes A and B are shown on the grid.



(a) Reflect shape A in the line  $y = 1$

(2)

(b) Describe fully the **single** transformation that maps shape A to shape B.

... Rotated  $90^\circ$  anticlockwise about  $(2, -2)$  ...

.....  
.....

(3)

(Total 5 marks)

4) Here are two column vectors.

$$\mathbf{f} = \begin{pmatrix} 4 \\ 5 \end{pmatrix} \quad \mathbf{g} = \begin{pmatrix} 5 \\ -2 \end{pmatrix}$$

Work out  $3\mathbf{f} - 2\mathbf{g}$

$$\begin{pmatrix} 12 \\ 15 \end{pmatrix} - \begin{pmatrix} 10 \\ -4 \end{pmatrix}$$

Answer .....  $\begin{pmatrix} 2 \\ 19 \end{pmatrix}$  .....

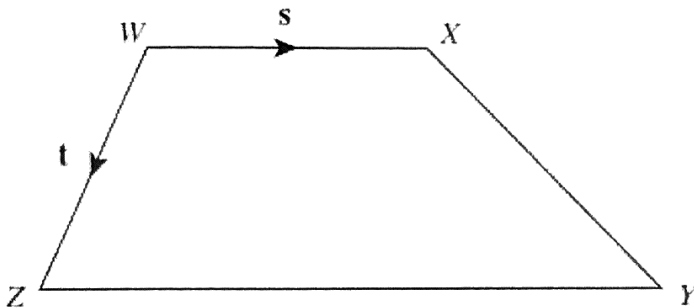
(Total 2 marks)

5) WXYZ is a trapezium.

$$\overrightarrow{WX} = \mathbf{s}$$

$$\overrightarrow{WZ} = \mathbf{t}$$

$$ZY : WX = 3 : 2$$



(a) Write vector  $\overrightarrow{ZY}$  in terms of  $\mathbf{s}$

Answer .....  $\frac{3}{2}\mathbf{s}$  .....

(1)

(b) Work out vector  $\overrightarrow{XY}$  in terms of  $\mathbf{s}$  and  $\mathbf{t}$   
Give your answer in its simplest form.

$$-\mathbf{s} + \mathbf{t} + \frac{3}{2}\mathbf{s}$$

Answer .....  $\mathbf{t} + \frac{1}{2}\mathbf{s}$  .....

(2)

(Total 3 marks)

(Total for test = 20 marks)