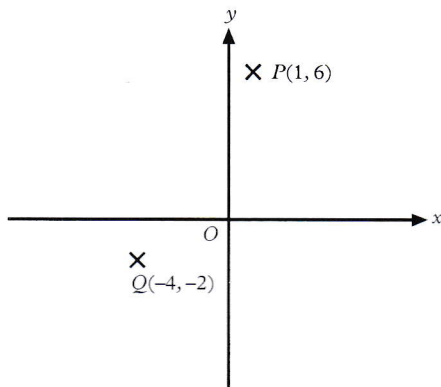
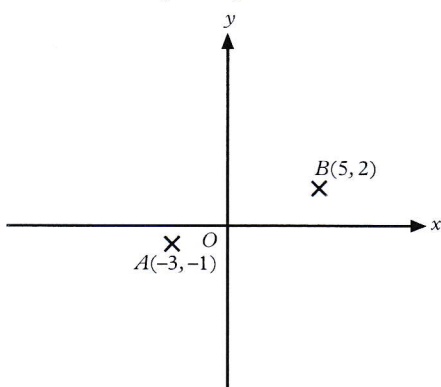


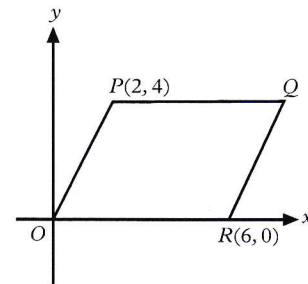
11. If the straight line  $x + 5y + 10 = 0$  intersects the  $x$ -axis and  $y$ -axis at  $P$  and  $Q$  respectively, find the coordinates of the mid-point of  $PQ$ .
12. If the straight line  $2x - 7y - 14 = 0$  intersects the  $x$ -axis and  $y$ -axis at  $S$  and  $T$  respectively, find the coordinates of the mid-point of  $ST$ .
13. The coordinates of the point  $P$  are  $(4, -5)$ . If  $P$  is rotated about the origin in an anti-clockwise direction through  $90^\circ$  to  $Q$ , find the length of  $PQ$ . (*Leave the radical sign  $\sqrt{\quad}$  in your answer.*)
14. In the figure, the coordinates of  $P$  and  $Q$  are  $(1, 6)$  and  $(-4, -2)$  respectively.  $P$  is translated 6 units to the right to  $P'$  while  $Q$  is reflected in the straight line  $x = -1$  to  $Q'$ .
  - (a) Write down the coordinates of  $P'$  and  $Q'$ .
  - (b) Is  $P'Q'$  parallel to  $PQ$ ? Explain your answer.



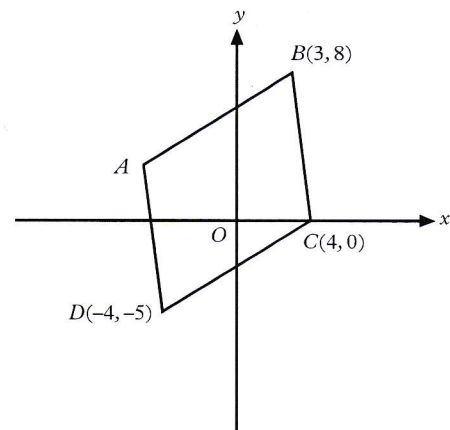
15. In the figure, the coordinates of  $A$  and  $B$  are  $(-3, -1)$  and  $(5, 2)$  respectively.  $A$  is rotated about the origin  $O$  in a clockwise direction through  $90^\circ$  to  $A'$ .  $B$  is translated 5 units downward to  $B'$ .
  - (a) Write down the coordinates of  $A'$  and  $B'$ .
  - (b) Are the lengths of  $AB$  and  $A'B'$  the same? Explain your answer.



16. In the figure,  $OPQR$  is a parallelogram. Find the coordinates of  $Q$ .



17. In the figure,  $ABCD$  is a parallelogram. Find the coordinates of  $A$ .



18. In the figure,  $ABCD$  is a right-angled trapezium. Find the coordinates of  $C$ .

