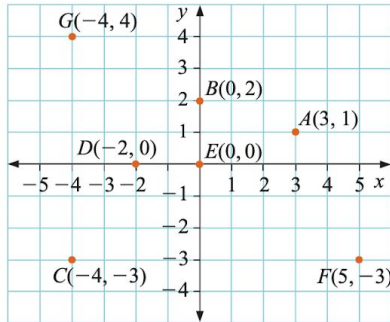Walt PLOT POINTS ON A NUMBER PLANE
Success criteria:I know what is a cartesian's plane/ number plane and use x axis and y axis
I can plot points and I know that when I see two points in a pair such as (9,11) they are
always in order of x and y

● EXAMPLE 1

Plot the following points on a number plane.
$A(3, 1)$, $B(0, 2)$, $C(-4, -3)$, $D(-2, 0)$, $E(0, 0)$, $F(5, -3)$, $G(-4, 4)$
The point $(0, 0)$ is called the origin.

Plot the following points first and then work on writing the pairs for the plotted points

1 Plot the following points on a number plane on grid paper.

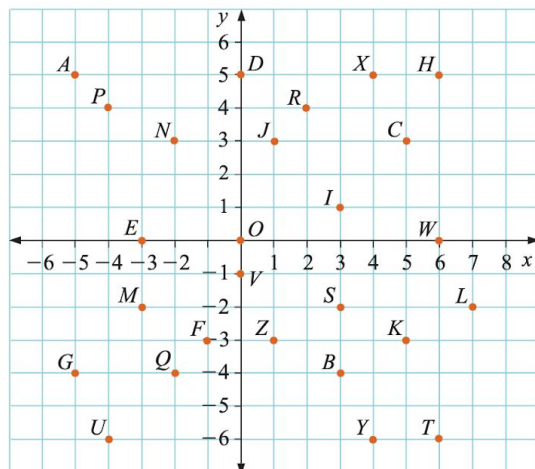|			
a $A(-3, -5)$	**b** $B(2, 6)$	**c** $C(5, -2)$	**d** $D(6, -1)$
e $E(1, 1)$	**f** $F(-2, -5)$	**g** $G(0, 2)$	**h** $H(3, 0)$
i $I(3, -5)$	**j** $J(-3, 0)$	**k** $K(4, 3)$	**l** $L(4, -5)$
m $M(0, -2)$	**n** $N(4, 4)$	**o** $O(0, 0)$	**p** $P(-3, -2)$
q $Q(4, -2)$	**r** $R(-5, -5)$	**s** $S(-5, 2)$	**t** $T(-1, 5)$

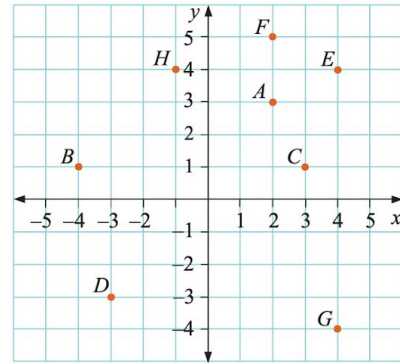**2** Write the coordinates of the points plotted on this number plane.

Use the link below to plot points
Interactive coordinate plots

3 Eight points have been plotted on this number plane.
   a Write the coordinates of the eight points.
   b Name two points with the same x-coordinates. What do you notice about their positions on the number plane?
   c Name two points with the same y-coordinates. What do you notice about their positions on the number plane?
   d Name two points that have equal x- and y-coordinates. What do you notice about their positions on the number plane?

4 **a** Plot the points $A(-3, 3)$, $B(1, 3)$ and $C(1, -1)$ on a number plane.
   b If $ABCD$ is a square, find the coordinates of the point D.

5 **a** Plot the points $P(-4, 0)$, $Q(-4, 5)$ and $R(3, 5)$ on a number plane.
   b If $PQRS$ is a rectangle, find the coordinates of S.

6 **a** Plot the points $A(-3, -2)$, $B(-2, -1)$, $C(-1, 0)$, $D(0, 1)$, $E(1, 2)$ on the same number plane.
   b Join the points. What do you notice?
   c What are the next three points (F, G and H) if the pattern continues?

7 **a** Plot the points $A(5, 3)$, $B(4, 2)$, $C(3, 1)$, $D(2, 0)$, $E(1, -1)$ on the same number plane.
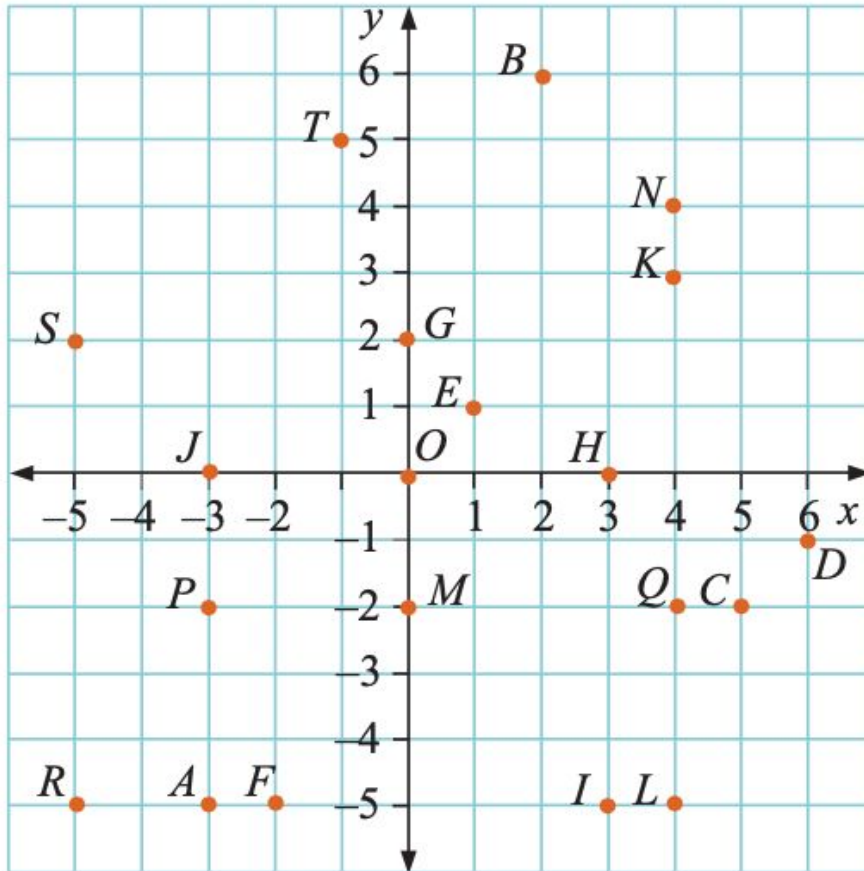   **b** What are the next three points (F, G and H) if the pattern continues?

The numbers may not not be whole numbers

8 Write the coordinates of the points on this number plane. The coordinates may not be whole numbers.
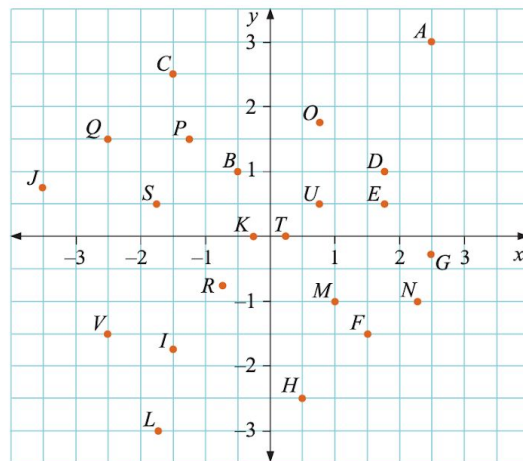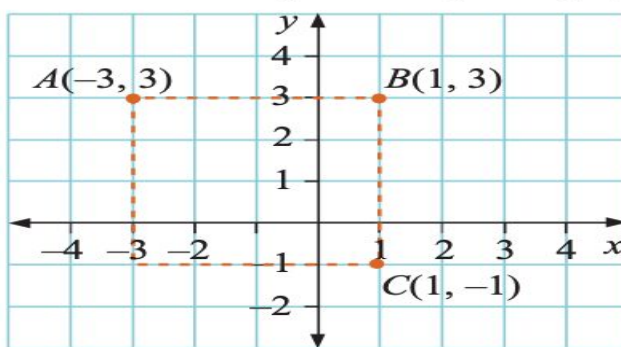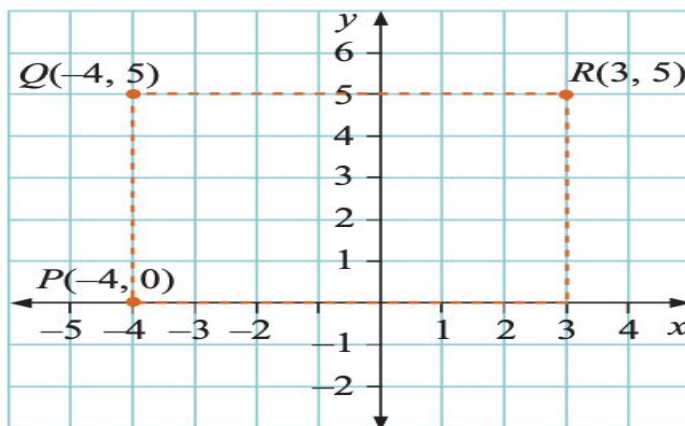
Check your answers

1

2 $A(-5, 5)$, $B(3, -4)$, $C(5, 3)$, $D(0, 5)$, $E(-3, 0)$,
$F(-1, -3)$, $G(-5, -4)$, $H(6, 5)$, $I(3, 1)$, $J(1, 3)$,
$K(5, -3)$, $L(7, -2)$, $M(-3, -2)$, $N(-2, 3)$, $O(0, 0)$,
$P(-4, 4)$, $Q(-2, -4)$, $R(2, 4)$, $S(3, -2)$, $T(6, -6)$,
$U(-4, -6)$, $V(0, -1)$, $W(6, 0)$, $X(4, 5)$, $Y(4, -6)$,
$Z(1, -3)$

3 a $A(2, 3)$, $B(-4, 1)$, $C(3, 1)$, $D(-3, -3)$, $E(4, 4)$,
$F(2, 5)$, $G(4, -4)$, $H(-1, 4)$

b A and F and E and G as they are on the same vertical
line.

c B and C and E and H as they are on the same
horizontal line.

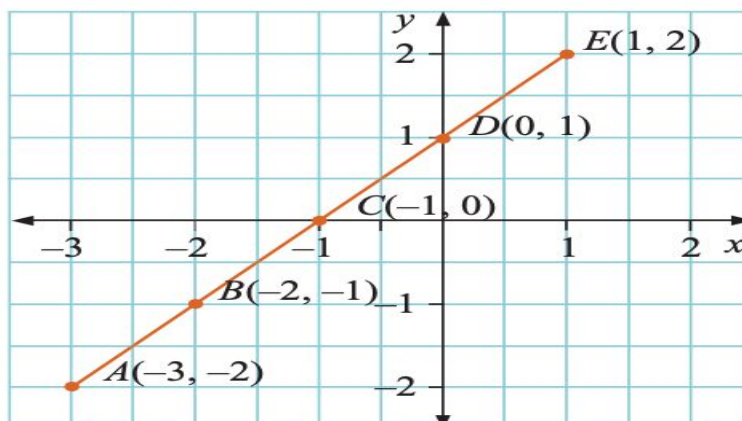**d** D and E as they are diagonally opposite each other.
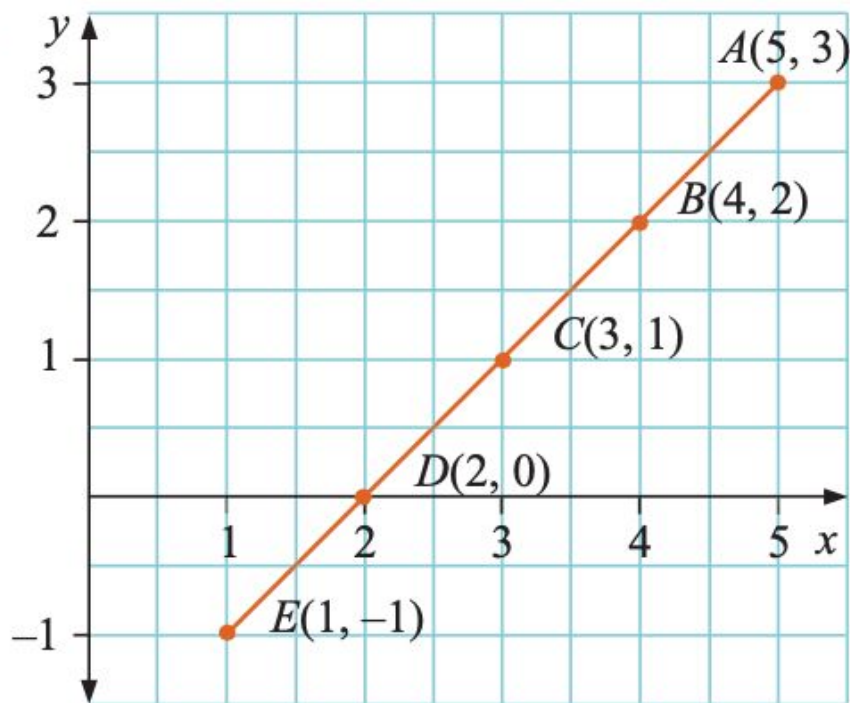
4 a

b $D(-3, -1)$

5 a

b $S(3, 0)$

6 a

b They are on a straight line.

c $F(2, 3)$, $G(3, 4)$, $H(4, 5)$

7 a

b $F(0, -2)$, $G(-1, -3)$, $H(-2, -4)$

8 $A\left(2\frac{1}{2}, 3\right)$, $B\left(-\frac{1}{2}, 1\right)$, $C\left(-1\frac{1}{2}, 2\frac{1}{2}\right)$, $D\left(1\frac{3}{4}, 1\right)$, $E\left(1\frac{3}{4}, \frac{1}{2}\right)$, $F\left(1\frac{1}{2}, -1\frac{1}{2}\right)$, $G\left(2\frac{1}{2}, -\frac{1}{4}\right)$, $H\left(\frac{1}{2}, -2\frac{1}{2}\right)$, $I\left(-1\frac{1}{2}, -1\frac{3}{4}\right)$, $J\left(-3\frac{1}{2}, \frac{3}{4}\right)$, $K\left(-\frac{1}{4}, 0\right)$, $L\left(-1\frac{3}{4}, -3\right)$, $M(1, -1)$, $N\left(2\frac{1}{4}, -1\right)$, $O\left(\frac{3}{4}, 1\frac{3}{4}\right)$, $P\left(-1\frac{1}{4}, 1\frac{1}{2}\right)$, $Q\left(-2\frac{1}{2}, 1\frac{1}{2}\right)$, $R\left(-\frac{3}{4}, -\frac{3}{4}\right)$, $S\left(-1\frac{3}{4}, \frac{1}{2}\right)$, $T\left(\frac{1}{4}, 0\right)$, $U\left(\frac{3}{4}, \frac{1}{2}\right)$, $V\left(-2\frac{1}{2}, -1\frac{1}{2}\right)$