

Wait PLOT POINTS ON A NUMBER PLANE

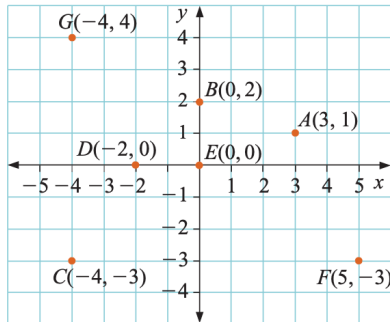
Success criteria: I know what is a cartesian's plane/ number plane and use x axis and y axis
I can plot points and I know that when I see two points in a pair such as (9,11) they are always in order of x and y

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 $P(-3, -2)$

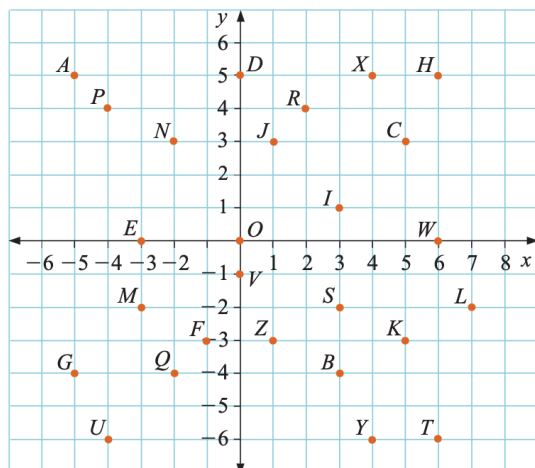
q $Q(4, -2)$

r $R(-5, -5)$

s $S(-5, 2)$

t $T(-1, 5)$

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

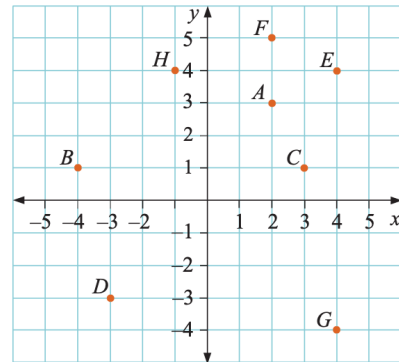


Use the link below to plot points

[Interactive coordinate plots](#)

Introduction to coordinate geometry

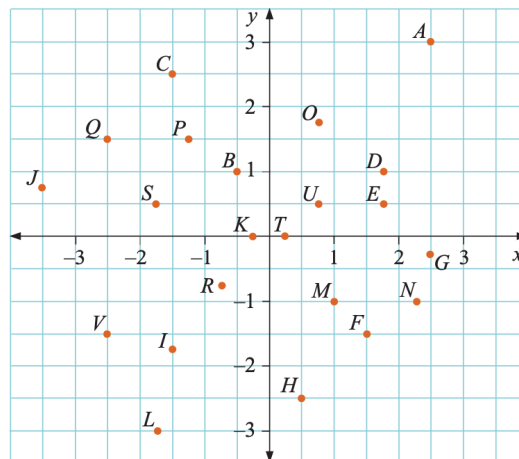
- 3** Eight points have been plotted on this number plane.
- Write the coordinates of the eight points.
 - Name two points with the same x -coordinates. What do you notice about their positions on the number plane?
 - Name two points with the same y -coordinates. What do you notice about their positions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



- Plot the points $A(-3, 3)$, $B(1, 3)$ and $C(1, -1)$ on a number plane.
 - If $ABCD$ is a square, find the coordinates of the point D .
- 5**
- Plot the points $P(-4, 0)$, $Q(-4, 5)$ and $R(3, 5)$ on a number plane.
 - If $PQRS$ is a rectangle, find the coordinates of S .
- 6**
- Plot the points $A(-3, -2)$, $B(-2, -1)$, $C(-1, 0)$, $D(0, 1)$, $E(1, 2)$ on the same number plane.
 - Join the points. What do you notice?
 - What are the next three points (F , G and H) if the pattern continues?
- 7**
- Plot the points $A(5, 3)$, $B(4, 2)$, $C(3, 1)$, $D(2, 0)$, $E(1, -1)$ on the same number plane.
 - What are the next three points (F , G and H) if the pattern continues?

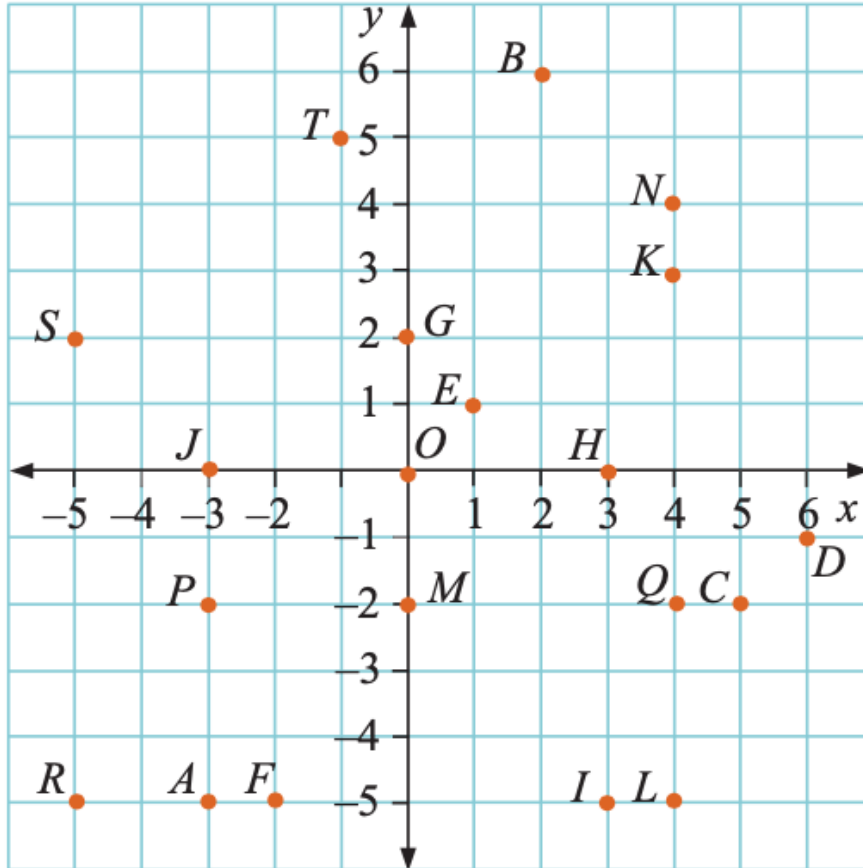
The numbers may not not be whole numbers

- 8** Write the coordinates of the points on this number plane. The coordinates may not be whole numbers.



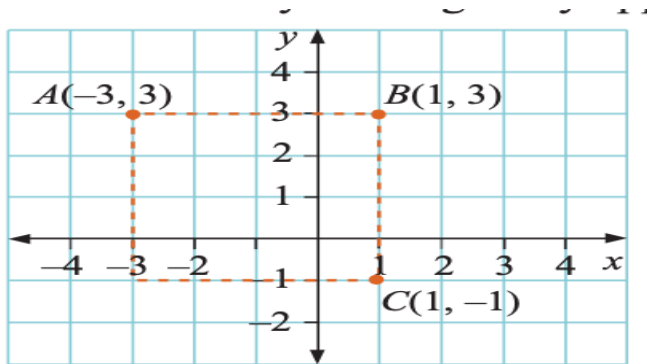
Check your answers

1



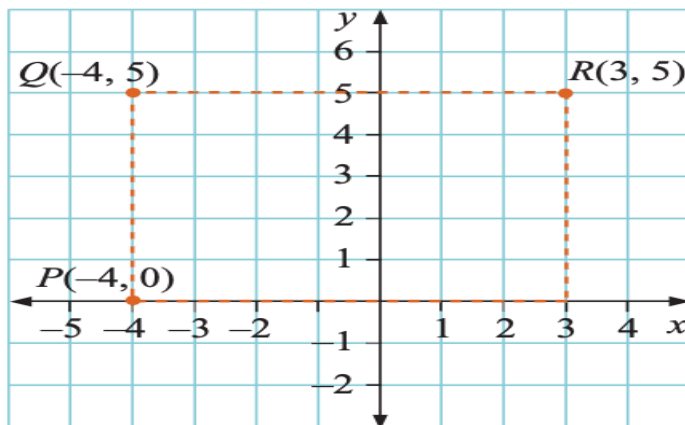
- 2** $A(-5, 5), B(3, -4), C(5, 3), D(0, 5), E(-3, 0),$
 $F(-1, -3), G(-5, -4), H(6, 5), I(3, 1), J(1, 3),$
 $K(5, -3), L(7, -2), M(-3, -2), N(-2, 3), O(0, 0),$
 $P(-4, 4), Q(-2, -4), R(2, 4), S(3, -2), T(6, -6),$
 $U(-4, -6), V(0, -1), W(6, 0), X(4, 5), Y(4, -6),$
 $Z(1, -3)$
- 3 a** $A(2, 3), B(-4,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



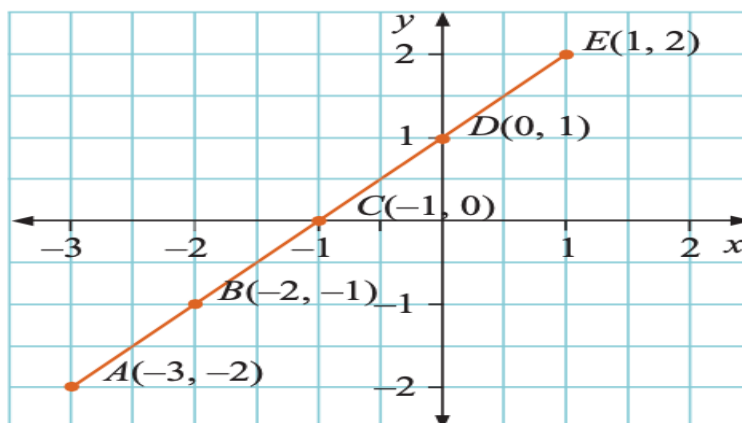
b $D(-3, -1)$

5 a



b $S(3, 0)$

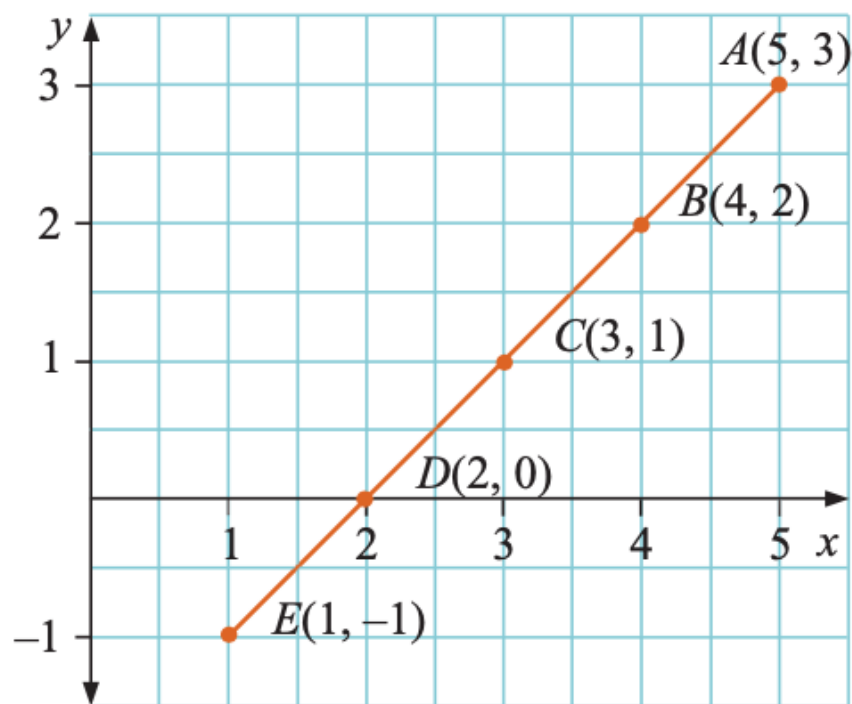
6 a



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