

Exercise 8.1

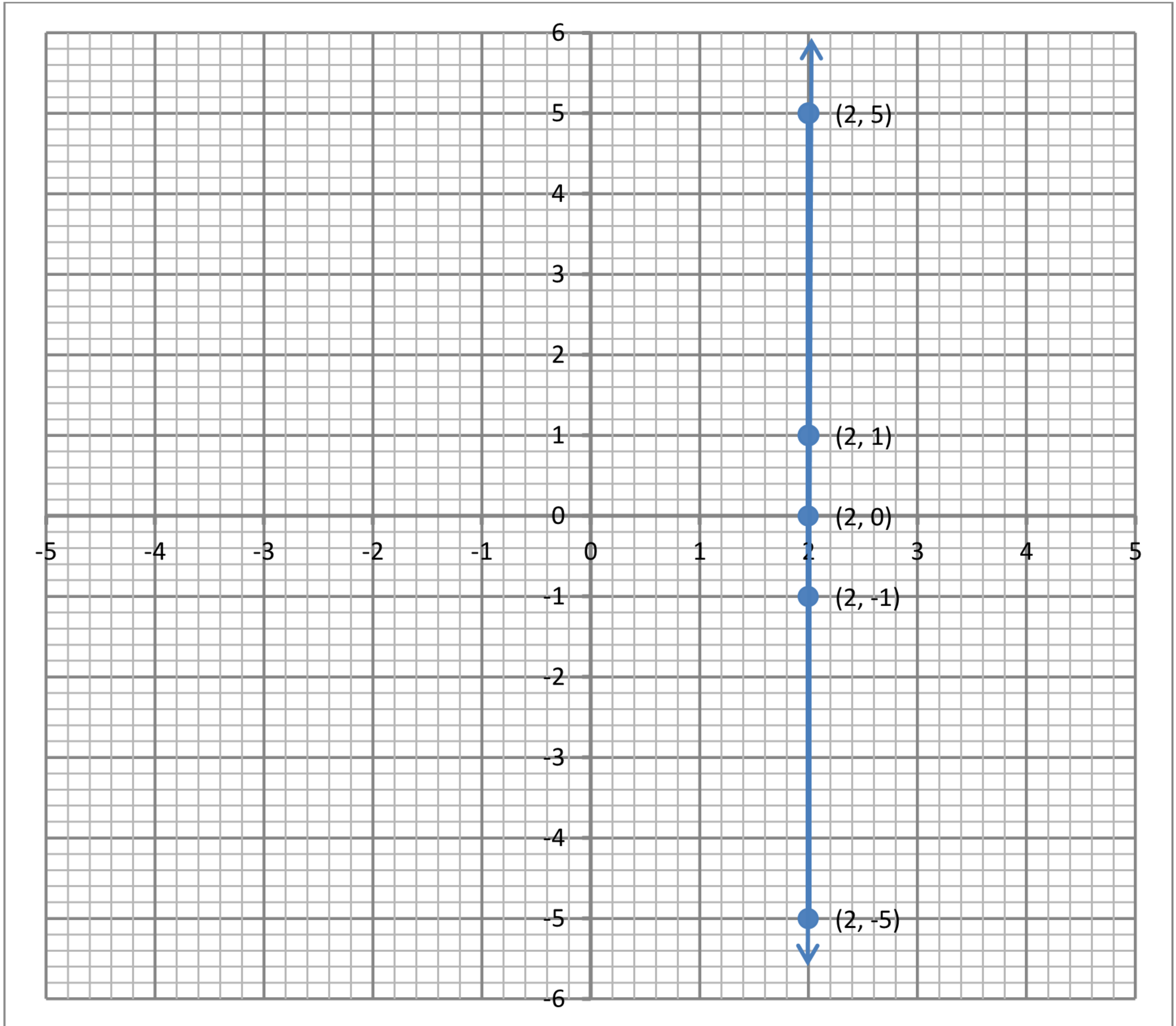
1. Determine the quadrant of the coordinate plane in which the following points lie:
P(-4, 3), Q (-5, -2), R (2, 2) and S(2, -6).

P lies in Q II, Q lies in Q III, R lies in Q I, S lies in Q IV

- 2. Draw the graph of each of the following**

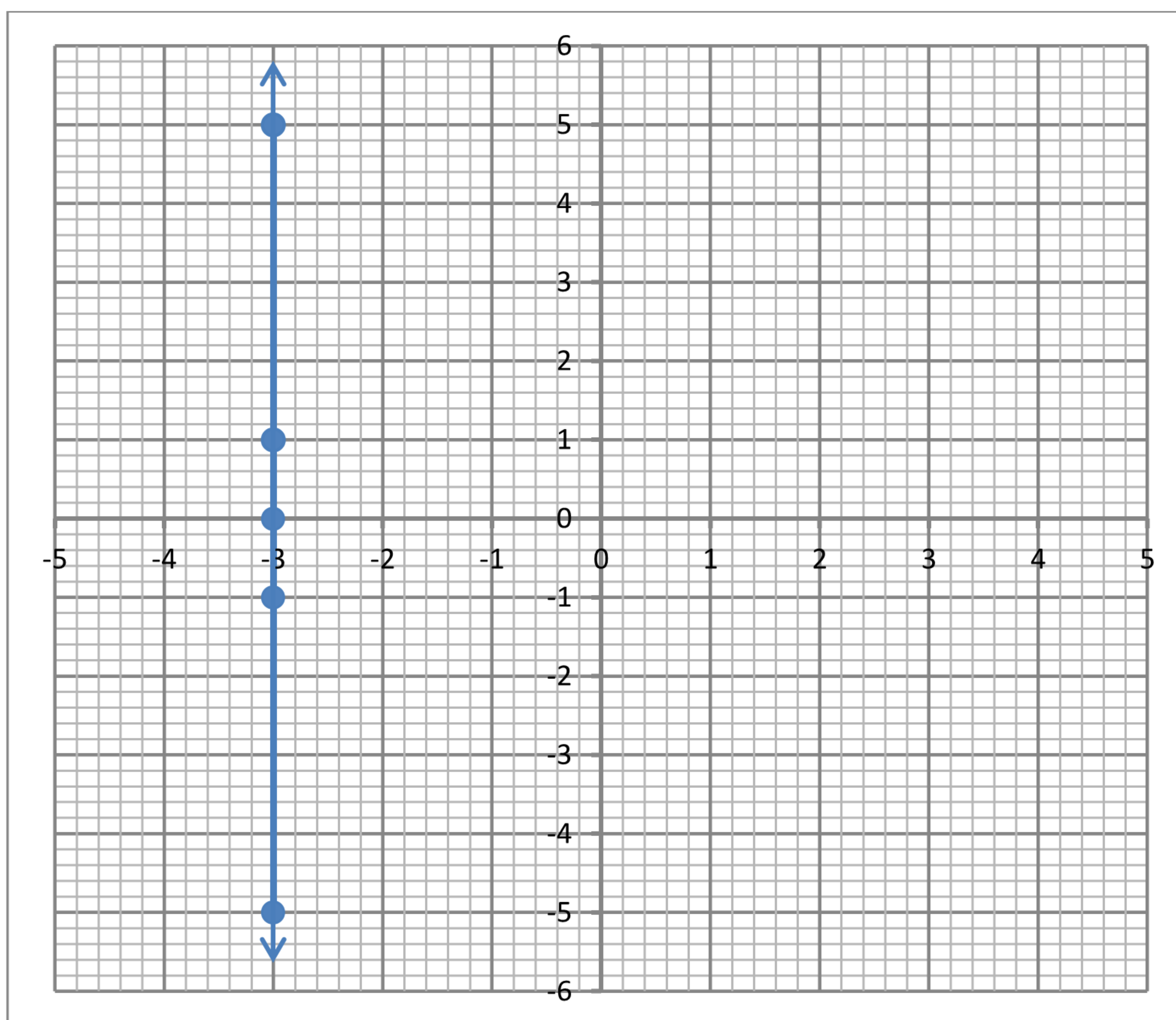
(i) $x = 2$

x	y
2	-5
2	-1
2	0
2	1
2	5



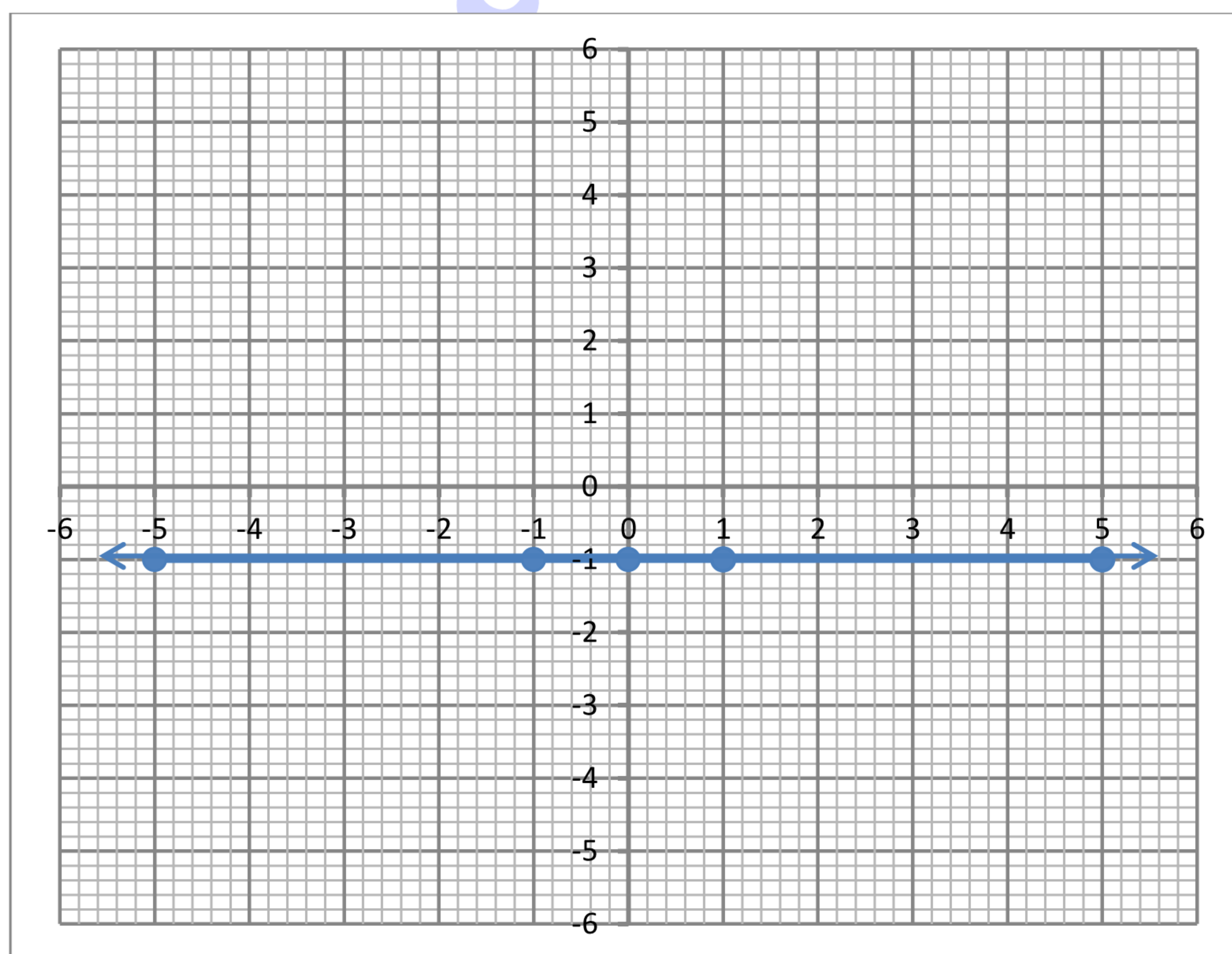
(ii) $x = -3$

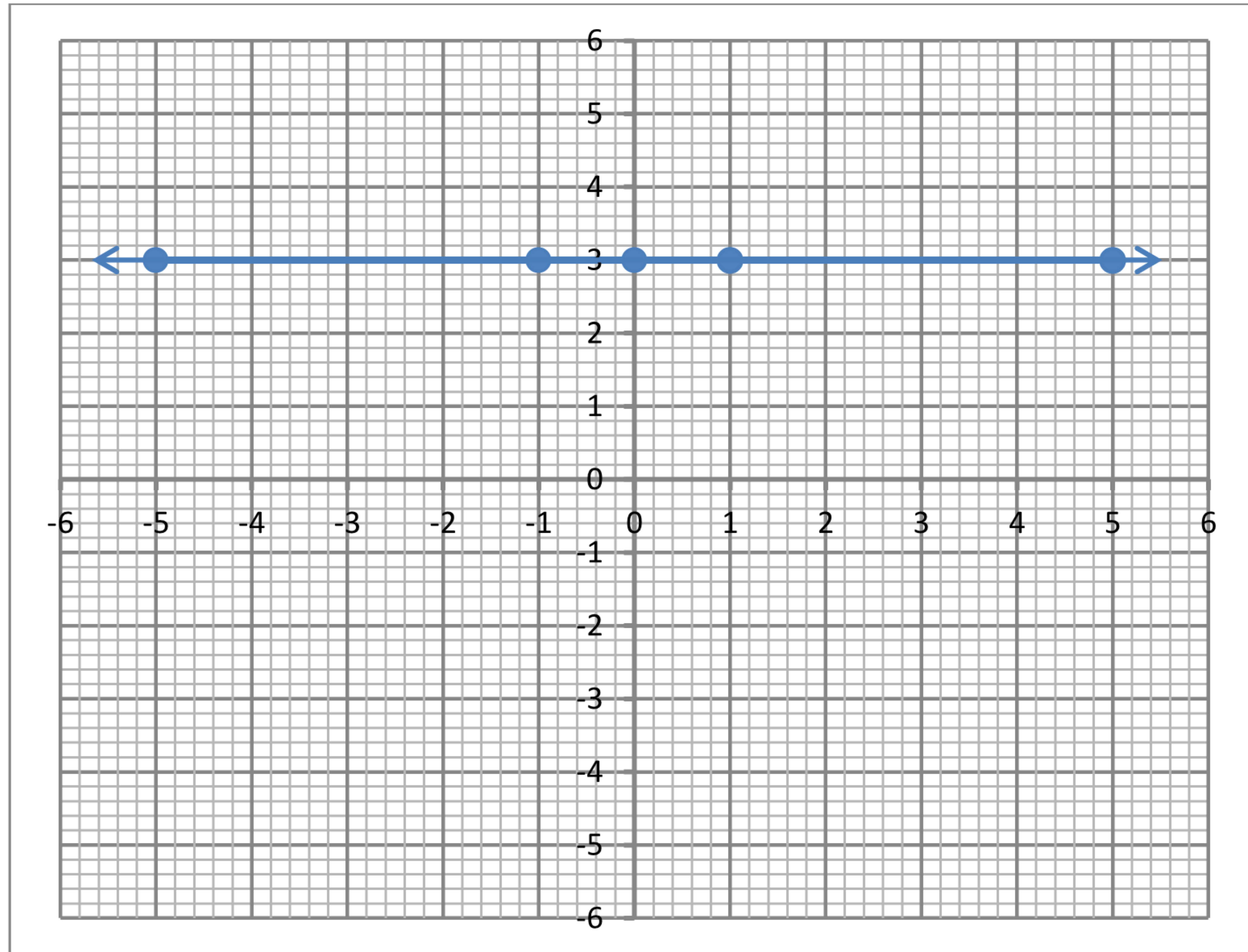
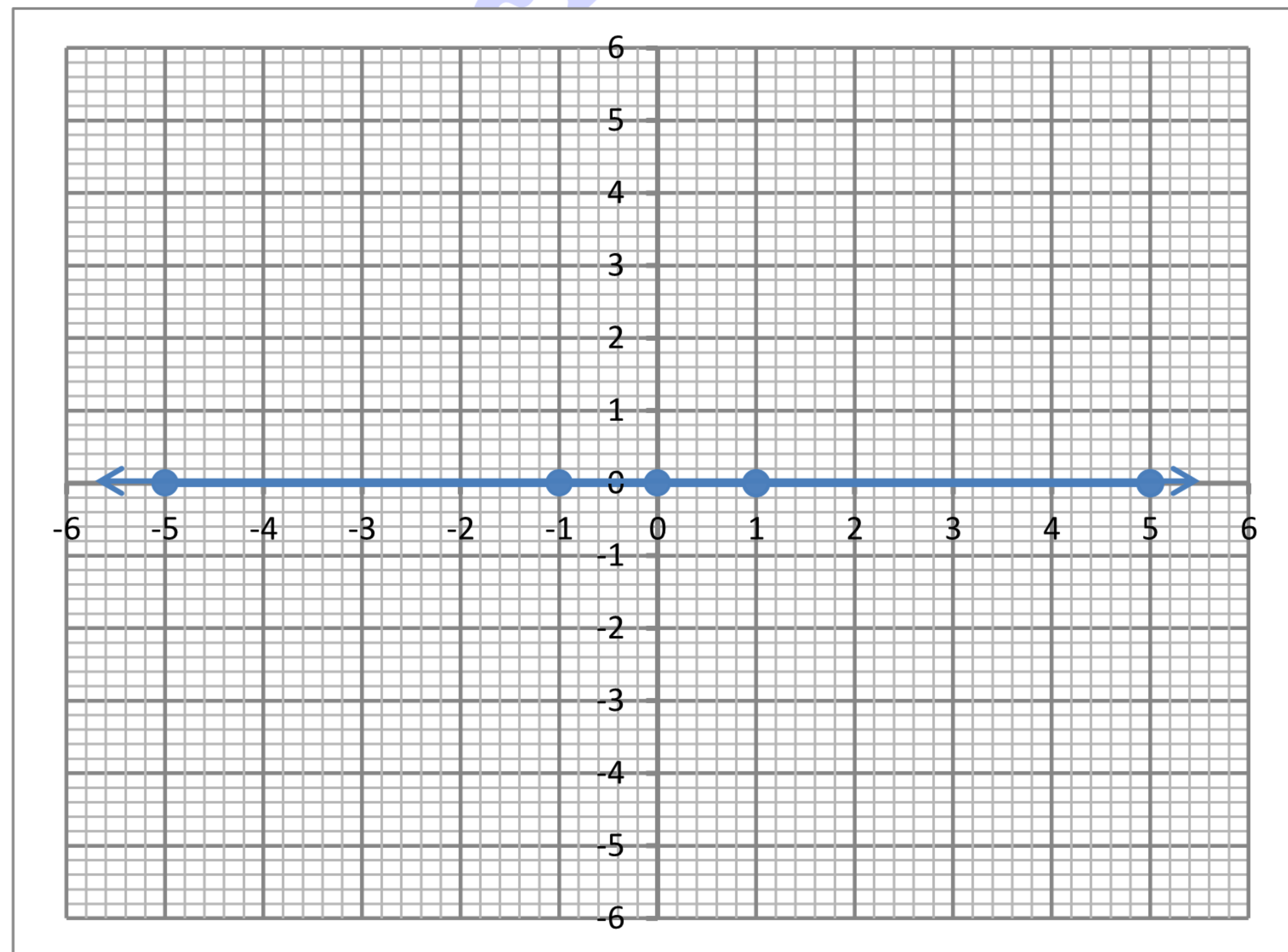
x	y
-3	-5
-3	-1
-3	0
-3	1
-3	5

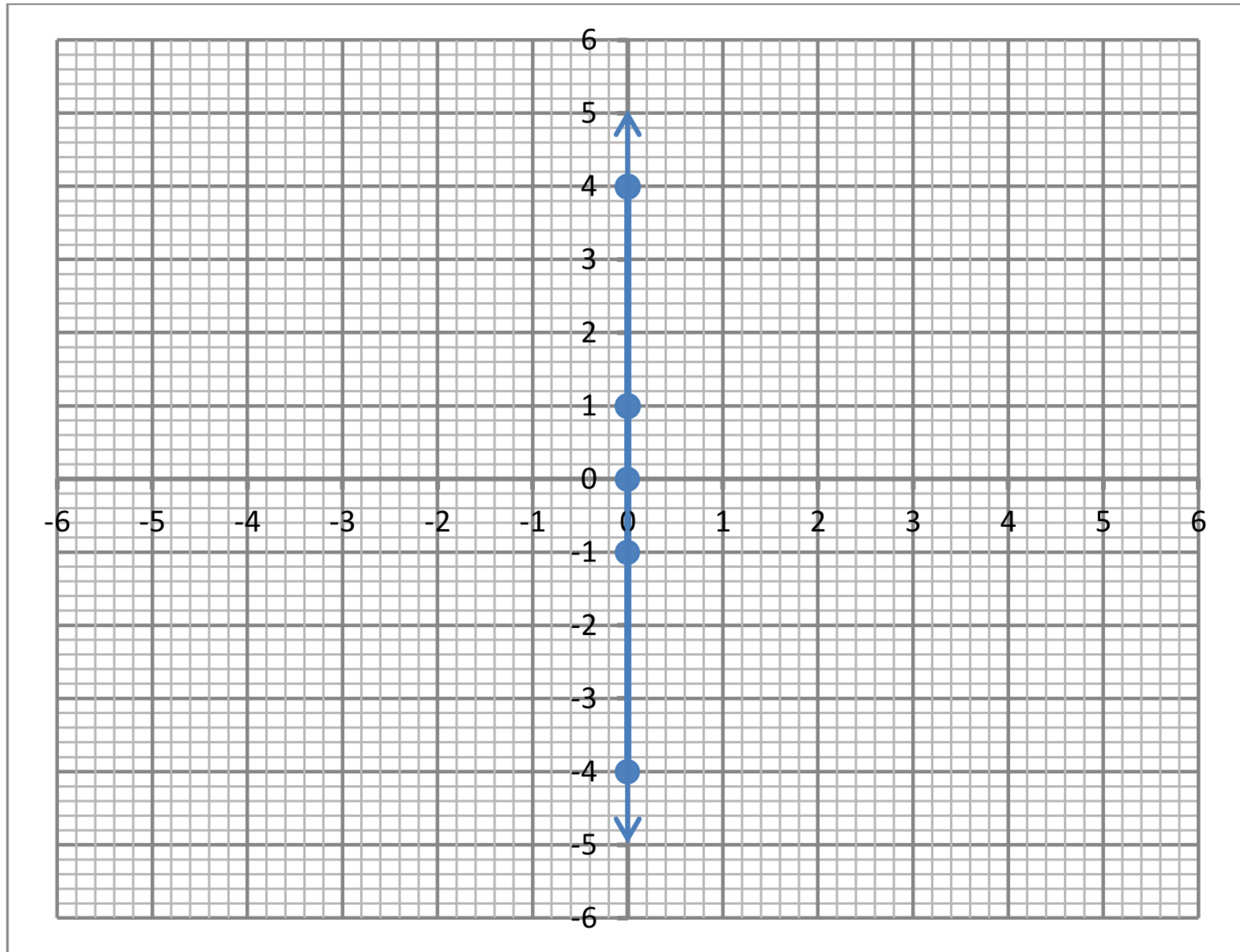


$$(iii) \quad y = -1$$

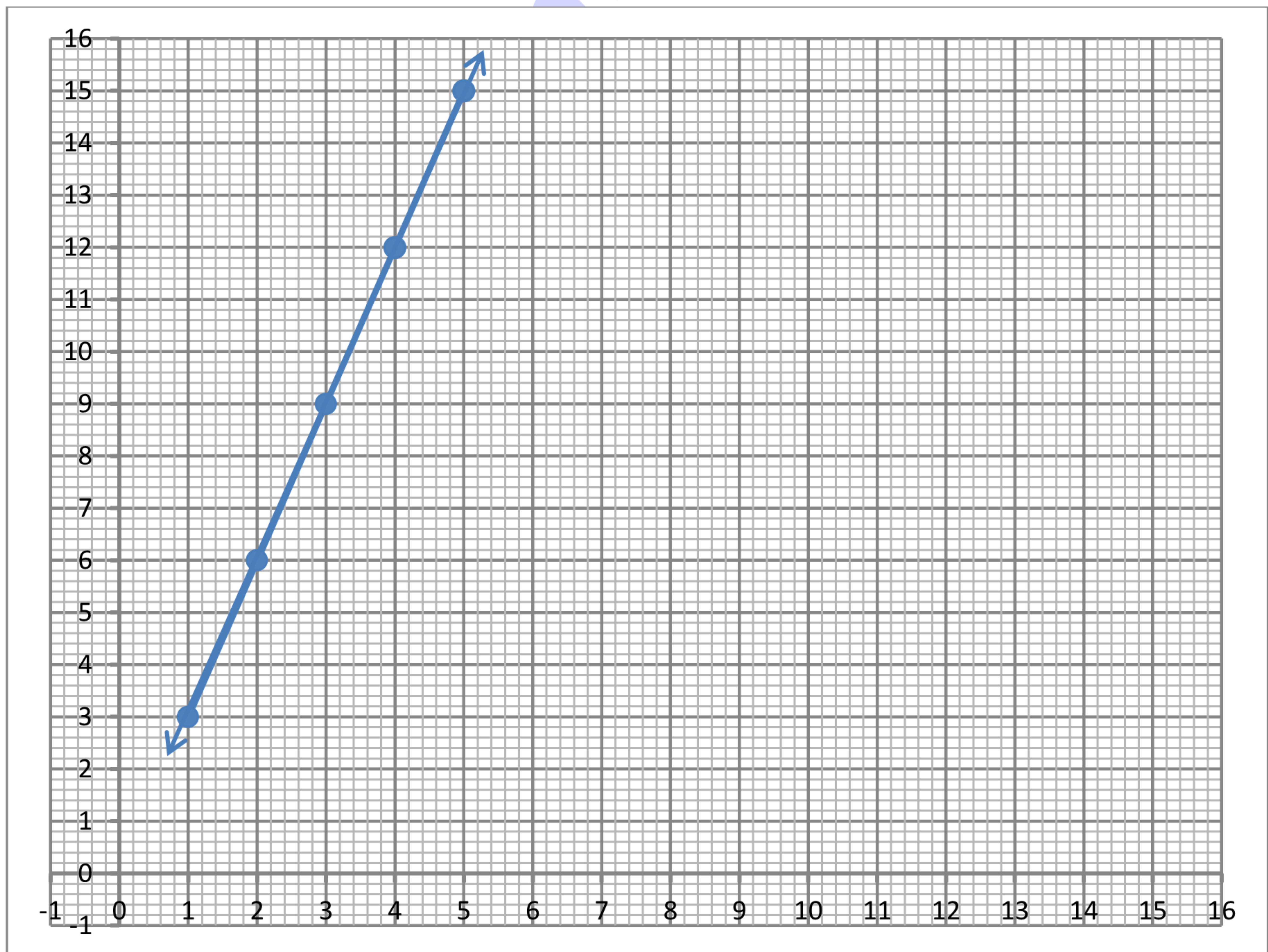
x	y
-5	-1
-1	-1
0	-1
1	-1
5	-1



[illegible][illegible]

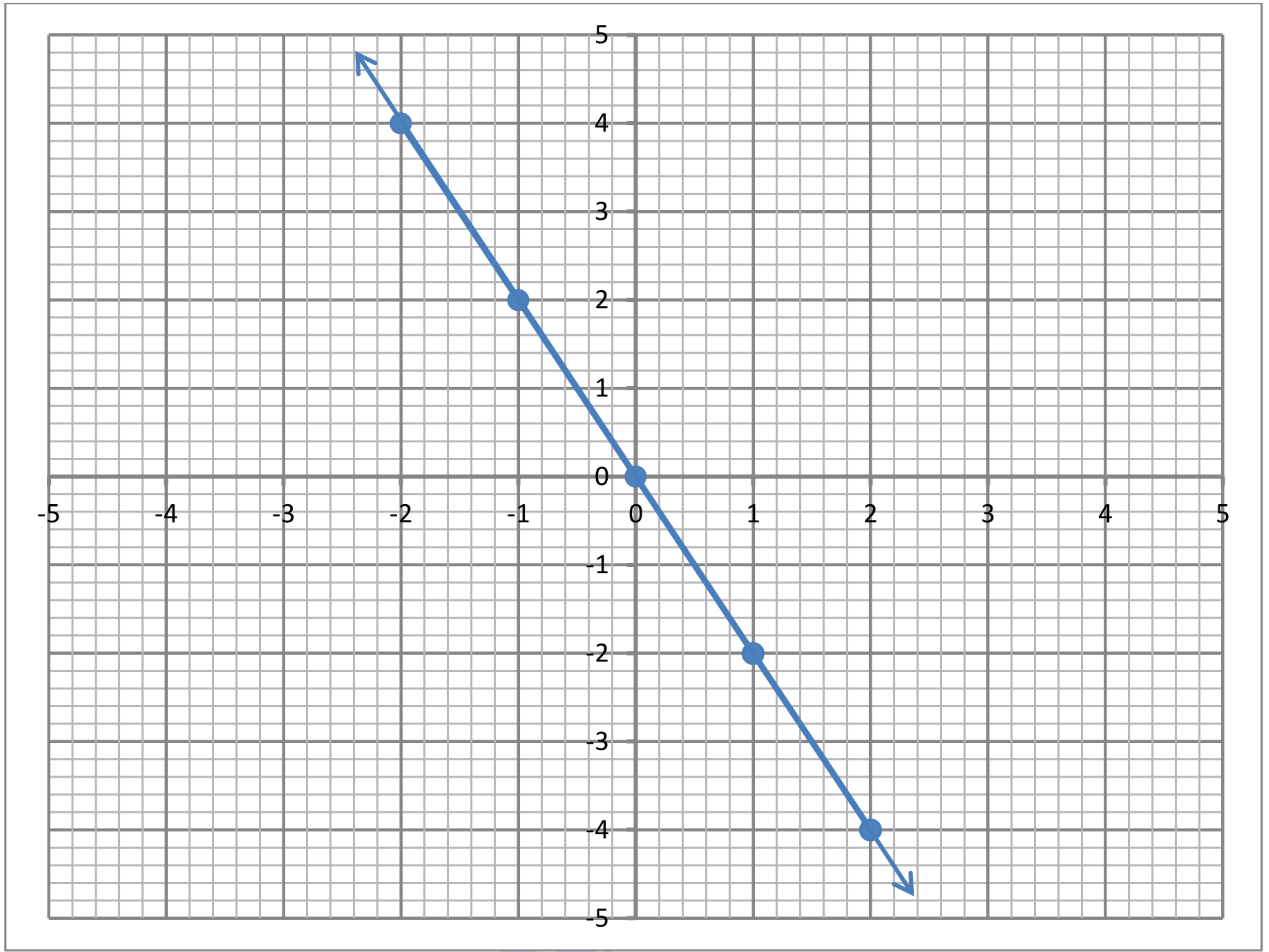
[illegible]

x	y
1	3
2	6
3	9
4	12
5	15



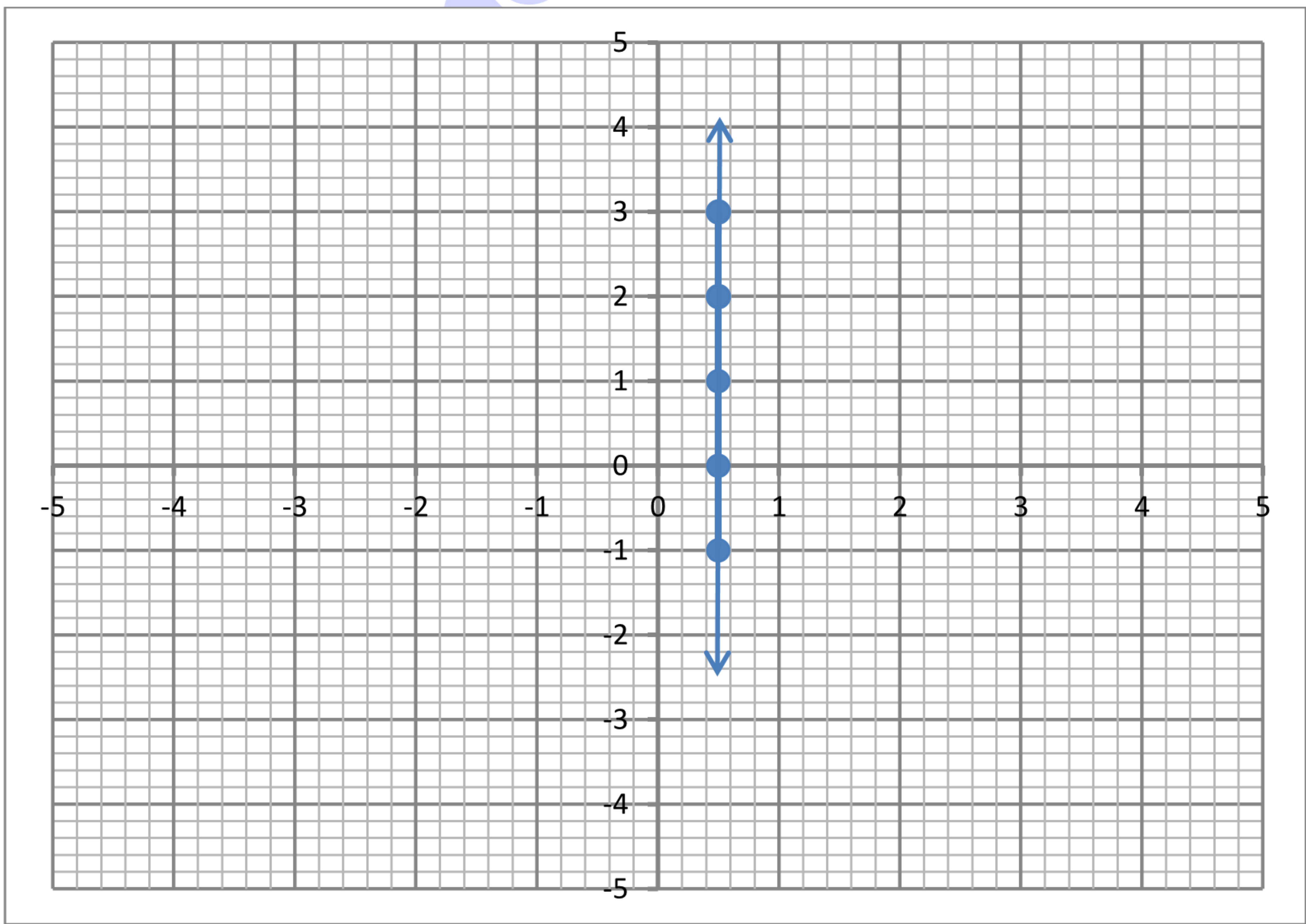
(viii) $-y = 2x$

x	y
-2	4
-1	2
0	0
1	-2
2	-4



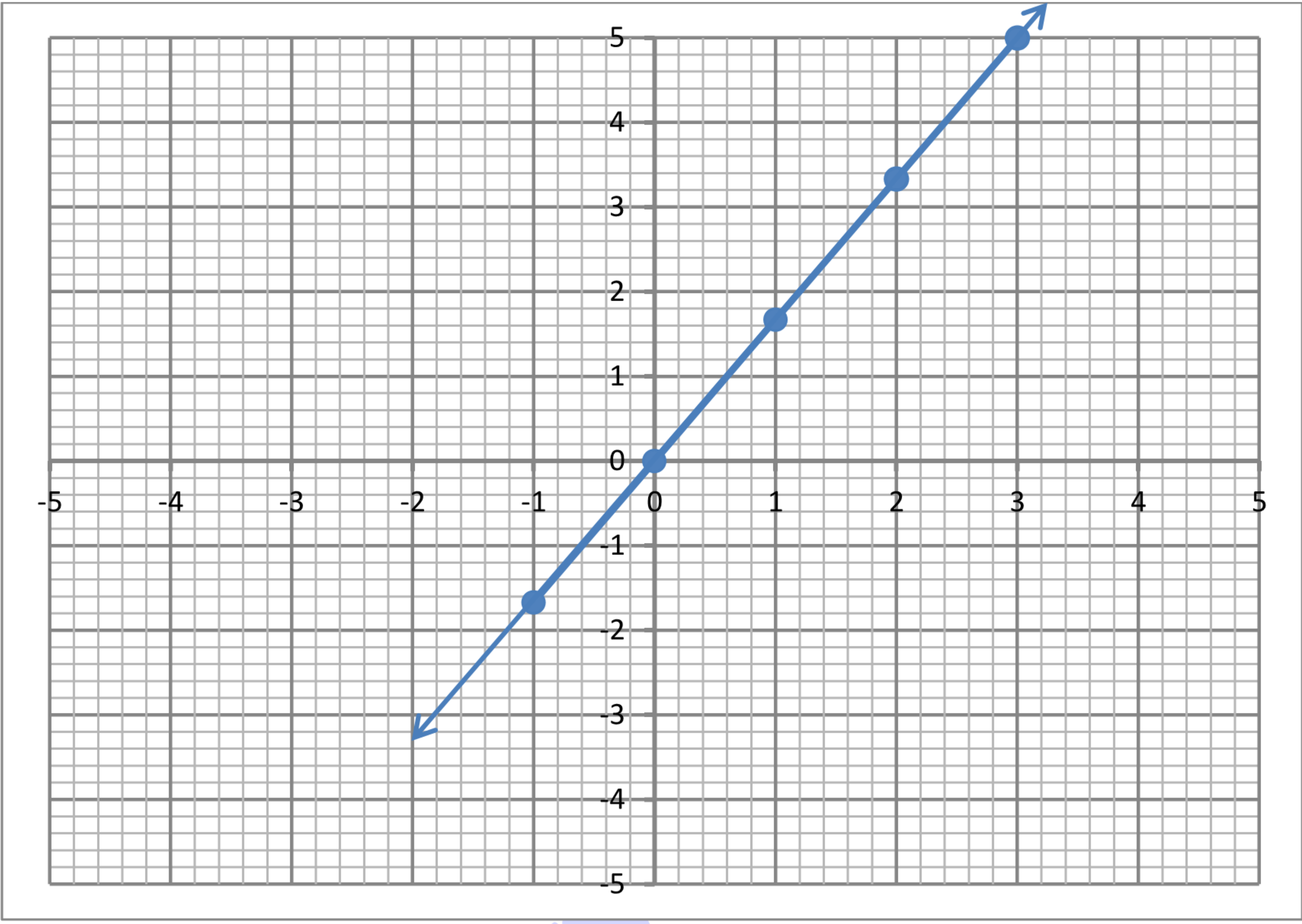
(ix) $\frac{1}{2} = x$

x	y
0.5	-1
0.5	0
0.5	1
0.5	2
0.5	3



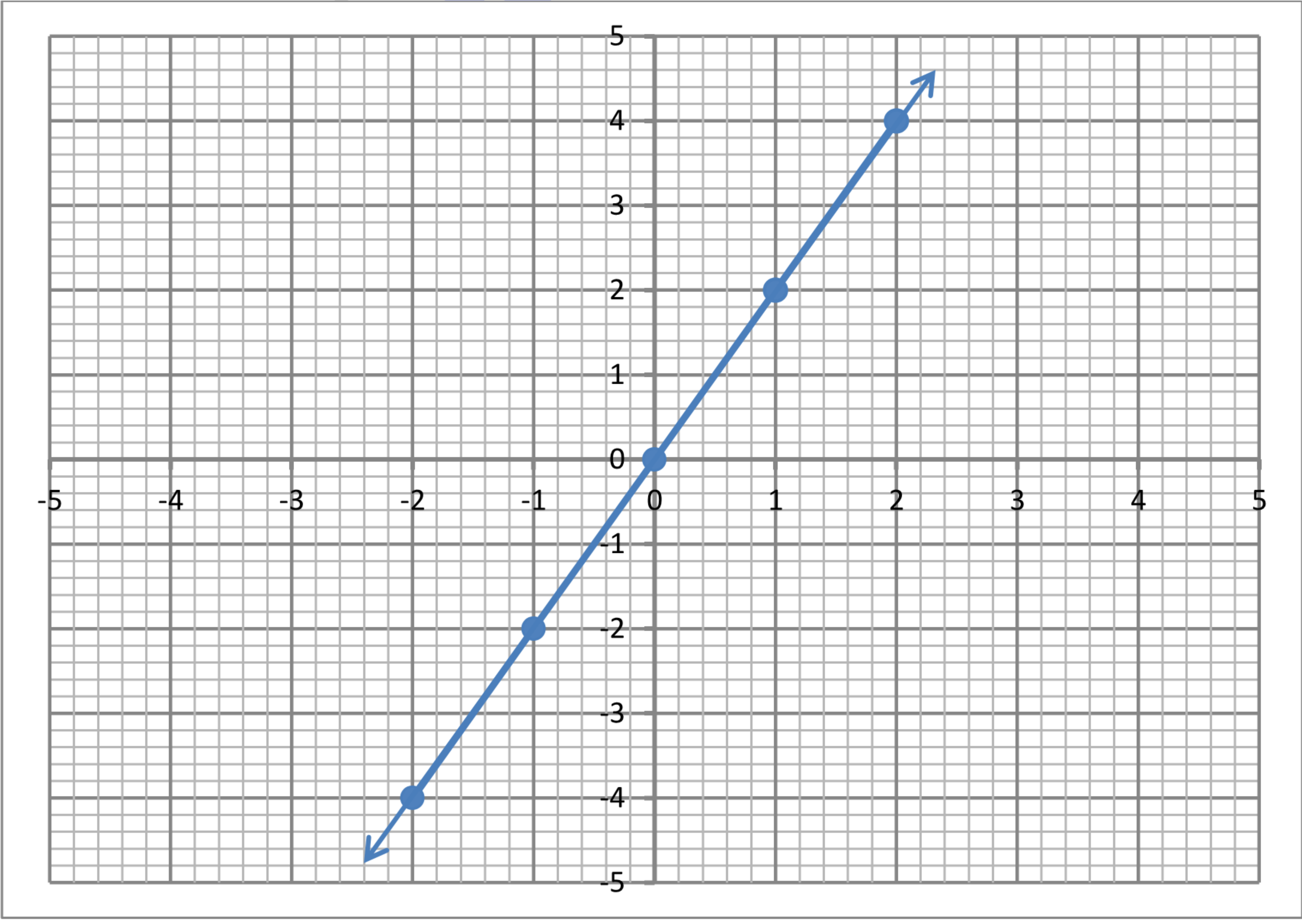
(x) $3y = 5x$ so, $y = \frac{5}{3}x$

x	y
-1	$-\frac{5}{3} = -1.67$
0	0
1	$\frac{5}{3} = 1.67$
2	$\frac{10}{3} = 3.33$
3	5



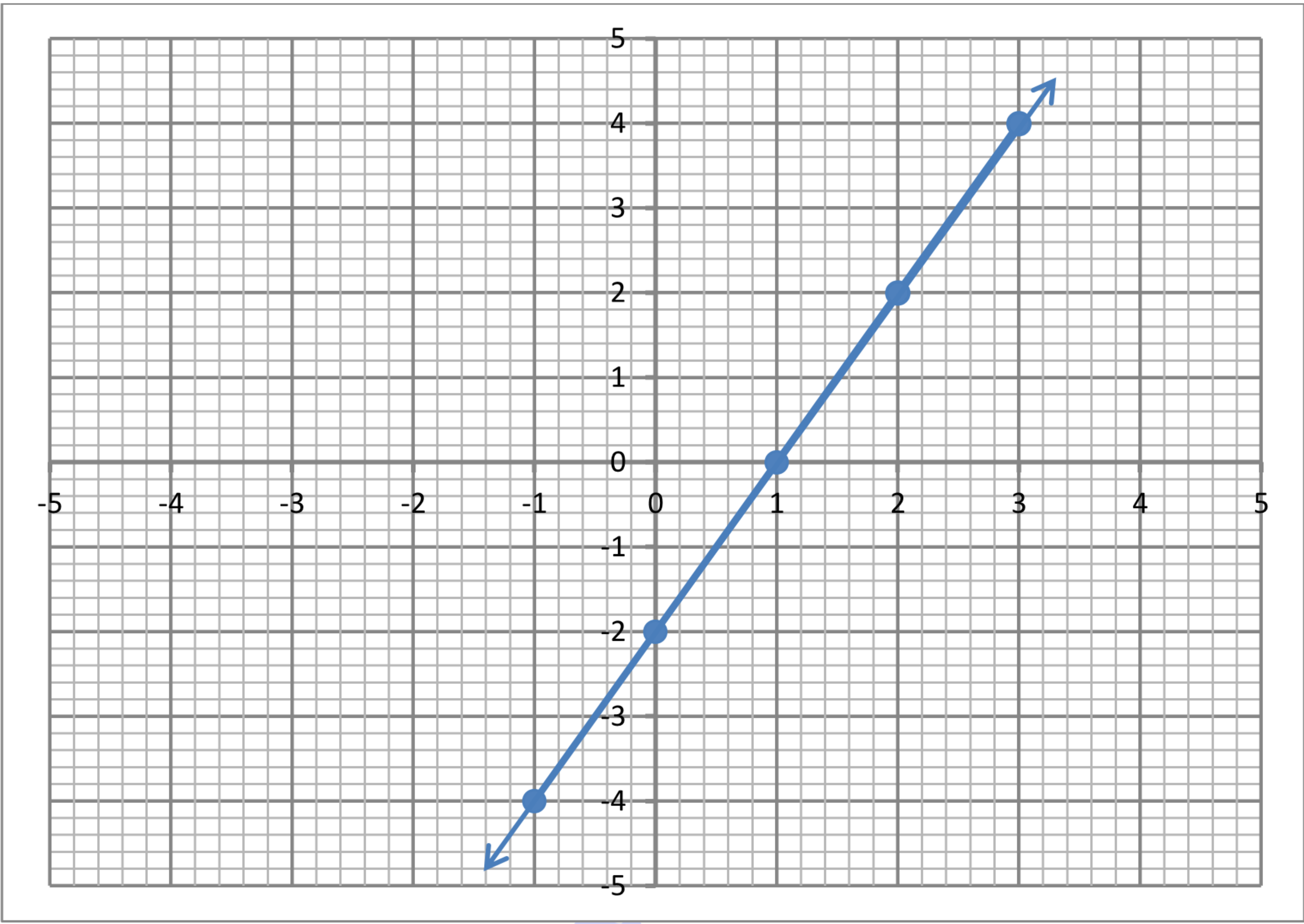
(xi) $2x - y = 0$ so, $-y = -2x$ and canceling the $-$ sign we get $y = 2x$

x	y
-2	-4
-1	-2
0	0
1	2
2	4



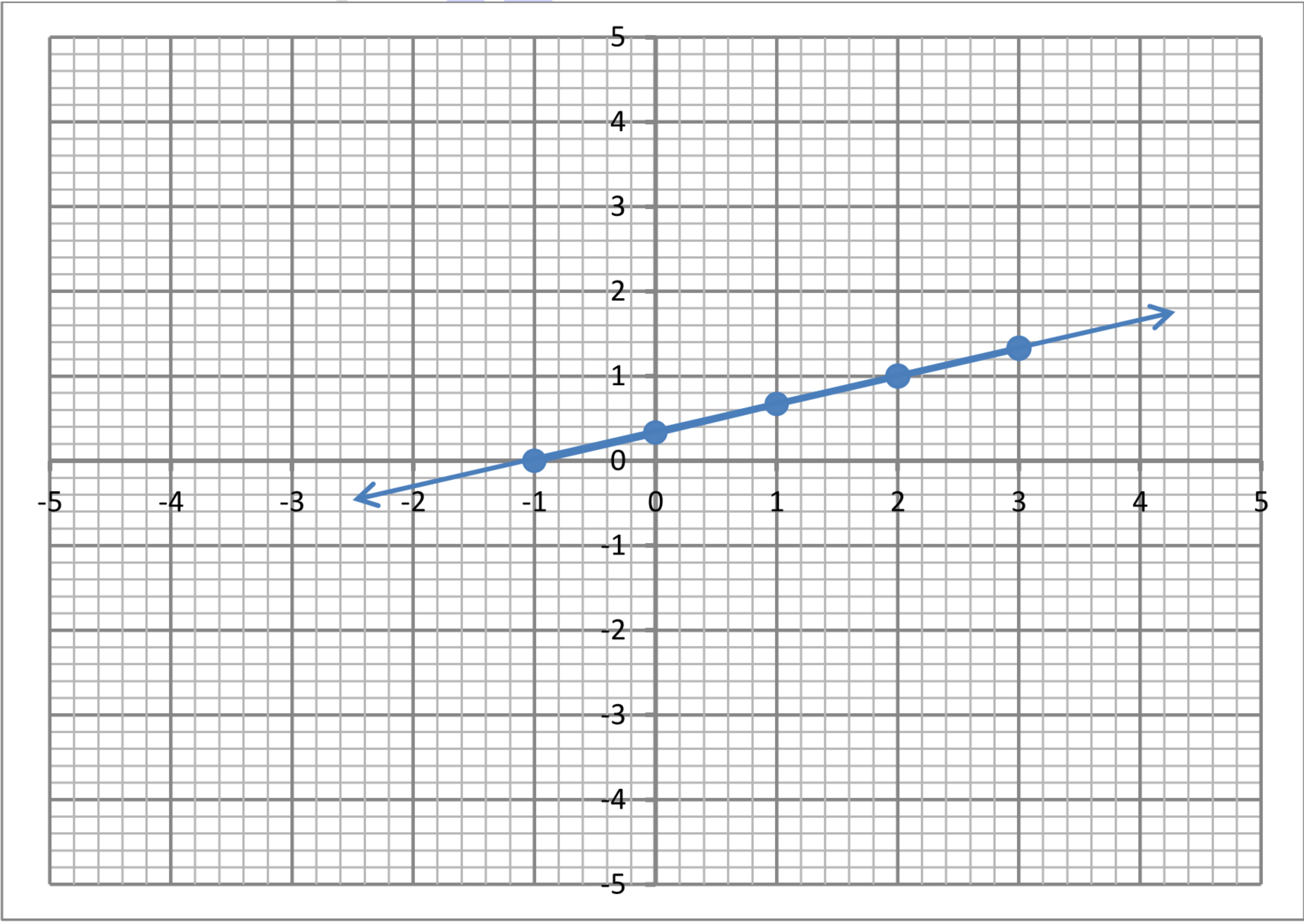
(xii) $2x - y = 2$ so, $-y = 2 - 2x$ and canceling the $-$ sign we get $y = 2x - 2$

x	y
-1	-4
0	-2
1	0
2	2
3	4



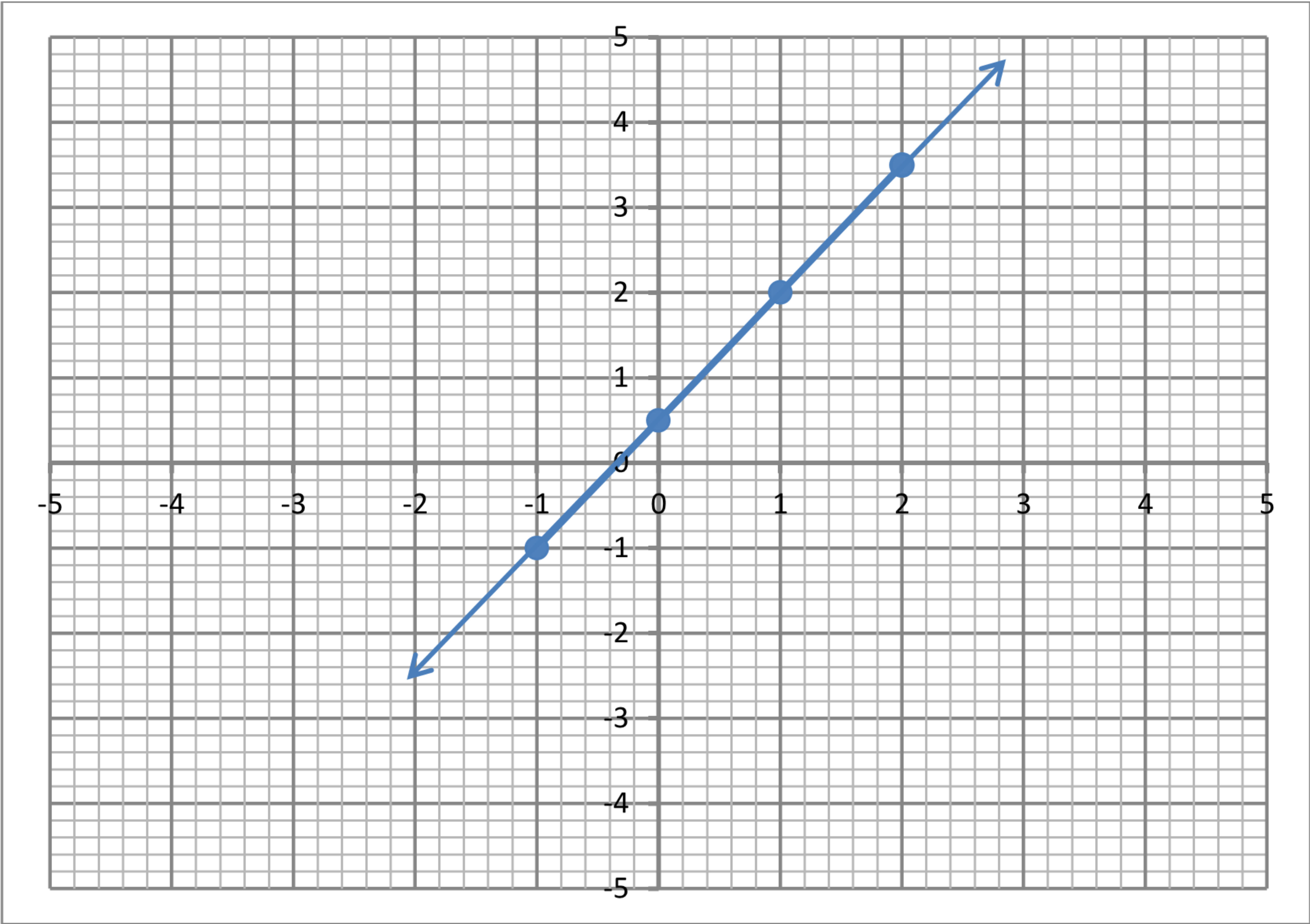
(xiii) $x - 3y + 1 = 0$ so, $-3y = -x - 1$, $y = \frac{-x-1}{-3}$ and canceling the $-$ sign we get $y = \frac{x+1}{3}$

x	y
-1	0
0	$\frac{1}{3} = 0.33$
1	$\frac{2}{3} = 0.67$
2	1
3	$\frac{4}{3} = 1.33$



(xiv) $3x - 2y + 1 = 0$ so, $-2y = -3x - 1$, $y = \frac{-3x-1}{-2}$ and canceling the $-$ sign we get $y = \frac{3x+1}{2}$

x	y
-1	-1
0	$\frac{1}{2} = 0.5$
1	2
2	$\frac{7}{2} = 3.5$
3	5



3. Are the following lines (i) parallel to x-axis (ii) parallel to y-axis?

(i) $2x - 1 = 3$
 $2x = 4$
 $x = 2$
Parallel to y-axis

(ii) $x + 2 = -1$
 $x = -3$
Parallel to y-axis

(iii) $2y + 3 = 2$
 $2y = -1$
 $y = \frac{-1}{2}$
Parallel to x-axis

(iv) $x + y = 0$
 $y = -x$
Neither parallel to x-axis nor to y-axis

(v) $2x - 2y = 0$
 $-2y = -2x$
 $y = x$
Neither parallel to x-axis nor to y-axis

4. Find the value of m and c of the following lines by expressing them in the form $y = mx + c$.

(a) $2x + 3y - 1 = 0$

$2x + 3y = 1$

$3y = 1 - 2x$

$y = \frac{1}{3} - \frac{2}{3}x$

$y = -\frac{2}{3}x + \frac{1}{3}$

So, $m = -\frac{2}{3}$, $c = \frac{1}{3}$

(b) $x - 2y = -2$

$-2y = -x - 2$

$y = -\frac{1}{-2}x - \frac{2}{-2}$

$y = \frac{1}{2}x + 1$

So, $m = \frac{1}{2}$, $c = 1$

(c) $3x + y - 1 = 0$

$y = -3x + 1$

$y = -3x + 1$

So, $m = -3$, $c = 1$

(d) $2x - y = 7$

$-y = -2x + 7$

$y = 2x - 7$

So, $m = 2$, $c = -7$

(e) $3 - 2x + y = 0$

$y = 2x - 3$

So, $m = 2$, $c = -3$

(f) $2x = y + 3$

$-y = -2x + 3$

$y = 2x - 3$

So, $m = 2$, $c = -3$

5. verify whether the following point lies on the line $2x - y + 1 = 0$ or not.

(i) $(2, 3)$

$2x - y + 1 = 0$

$2(2) - 3 + 1 = 0$

$4 - 3 + 1 = 0$

$1 + 1 \neq 0$

So the point does not lie on the given line.

(ii) $(0, 0)$

$2x - y + 1 = 0$

$2(0) - 0 + 1 = 0$

$1 + 1 \neq 0$

So the point does not lie on the given line.

(iii) $(-1, 1)$

$$2x - y + 1 = 0$$

$$2(-1) - 1 + 1 = 0$$

$$-3 + 2 \neq 0$$

So the point does not lie on the given line.

(iv) $(2, 5)$

$$2x - y + 1 = 0$$

$$2(2) - 5 + 1 = 0$$

$$4 - 5 + 1 = 0$$

$$5 - 5 = 0$$

So the point lies on the given line.

(v) $(5, 3)$

$$2x - y + 1 = 0$$

$$2(5) - 3 + 1 = 0$$

$$10 - 3 + 1 = 0$$

$$11 - 3 \neq 0$$

So the point does not lie on the given line.

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