

Equations of Parallel Lines

ANSWERS



Section A Write down the pairs of parallel lines from the equations below.

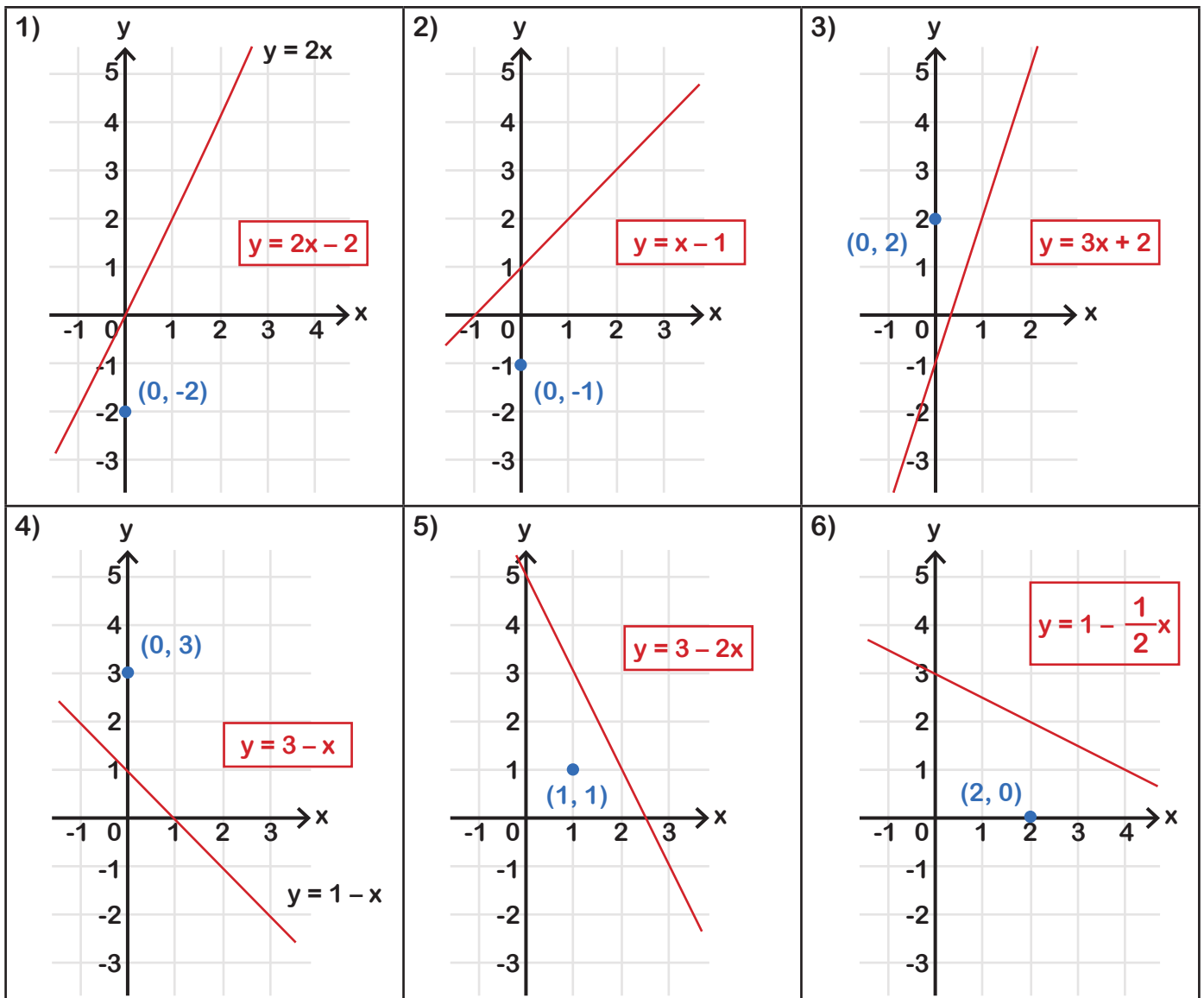
- 1) $y = 2x - 1$ 2) $y = 2 - 3x$ 3) $y = \frac{1}{2}x + 4$ 4) $x - 2y = 8$
 5) $3y - x = 1$ 6) $5y - 10x = 7$ 7) $3x + y = 5$ 8) $6y = 2x - 9$

- 1 and 6 2 and 7 3 and 4 5 and 8

Section B Write the equation of the parallel line through the point given.

- 1) Parallel to $y = x$ through $(0, 2)$ 2) Parallel to $y = 2x$ through $(0, -3)$
 $y = x + 2$ $y = 2x - 3$
 3) Parallel to $y = 5x$ through $(0, 1)$ 4) Parallel to $y = -3x$ through $(0, -2)$
 $y = 5x + 1$ $y = -3x - 2$

Section C Write the equation of the parallel line through the point shown.



Equations of Parallel Lines

ANSWERS



Section D Find the equation of the parallel line through the given point.

1) Parallel to $y = x - 5$, through $(2,3)$

$$y = x + 1$$

2) Parallel to $y = 2x - 4$, through $(1,3)$

$$y = 2x + 1$$

3) Parallel to $y = \frac{1}{2}x + 2$, through $(4,1)$

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

4) Parallel to $2x + 3y = 4$, through $(2,1)$

$$2x + 3y = 7$$

Section E Find the line parallel to the line through the given points.

1) Goes through $(0,0)$ and parallel to the line through $(0,4)$ and $(1,7)$

$$y = 3x$$

2) Goes through $(0,0)$ and parallel to the line through $(0,3)$ and $(1,5)$

$$y = 2x$$

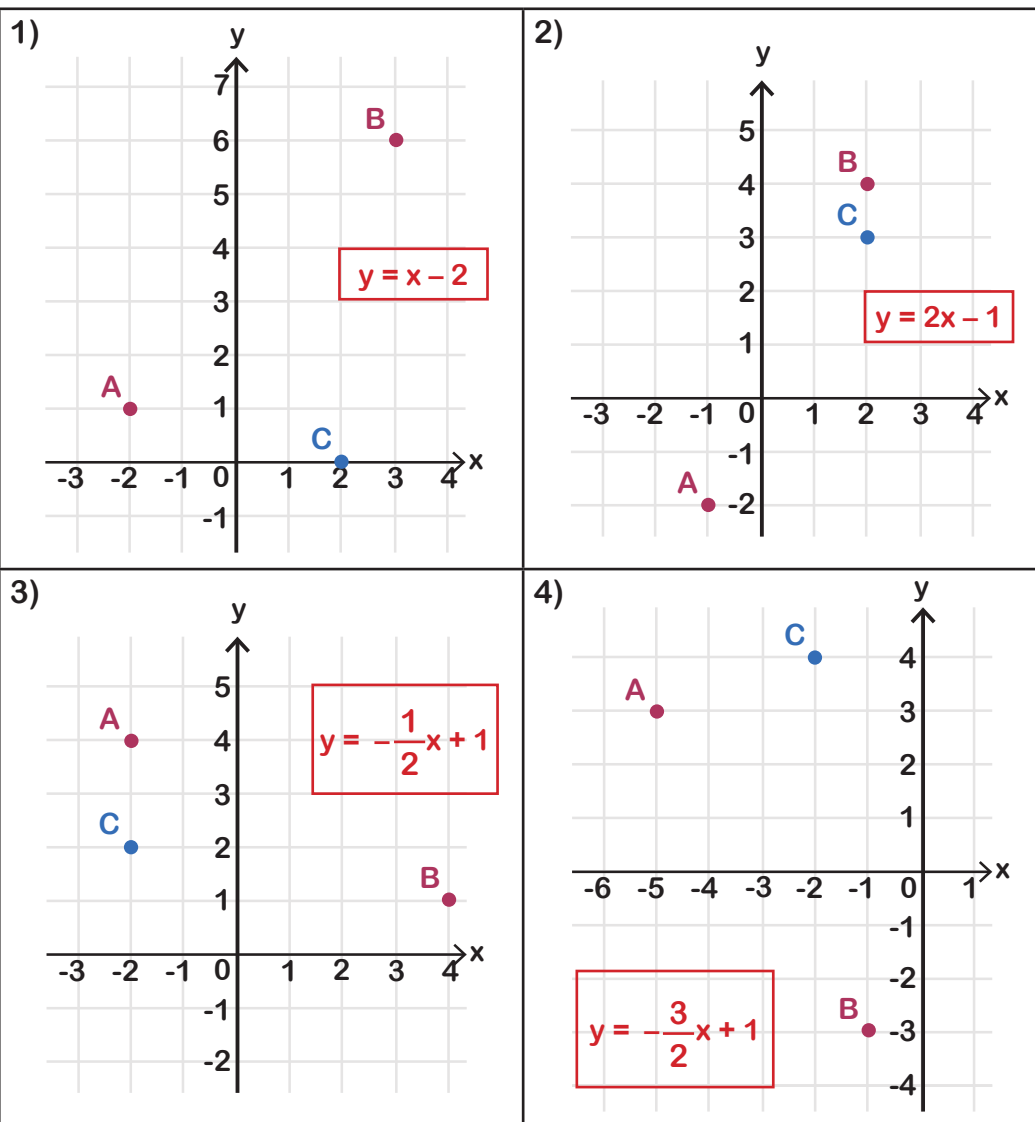
3) Goes through $(0,1)$ and parallel to the line through $(0,-1)$ and $(1,3)$

$$y = 4x + 1$$

4) Goes through $(0,-2)$ and parallel to the line through $(0,2)$ and $(1,-1)$

$$y = -3x - 2$$

Section F Find the line that goes through C which is parallel to the line through A and B.



EXTENSION:
Prove that the line passing through the points $(-13, -4)$ and $(12, 6)$ is parallel to the line $2x - 5y = 9$

ANSWER:

$2x - 5y = 9$ has a gradient equal to $\frac{2}{5}$.

$$\frac{6 - (-4)}{12 - (-13)} = \frac{10}{25} = \frac{2}{5}$$

Lines here are same gradient, so they are parallel.