

Examples

Workout



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Question 1: Write down the gradient of each of these lines.

- (a) $y = 3x + 1$ (b) $y = 2x - 5$ (c) $y = 7x + 4$ (d) $y = 10x + 5$
(e) $y = x - 2$ (f) $y = 6x$ (g) $y = -4x + 3$ (h) $y = -3x - 7$
(i) $y = \frac{1}{2}x + 3$ (j) $y = -\frac{4}{5}x - 9$

Question 2: Write down where each of these lines cross the y-axis (y-intercept)

- (a) $y = 2x + 3$ (b) $y = 7x + 1$ (c) $y = 3x - 2$ (d) $y = x - 5$
(e) $y = 2x$ (f) $y = -4x + 6$ (g) $y = -5x - 3$ (h) $y = -3x$
(i) $y = \frac{4}{3}x + \frac{2}{5}$ (j) $y = -\frac{2}{3}x - \frac{1}{2}$

Question 3: Write down the equation of the lines below

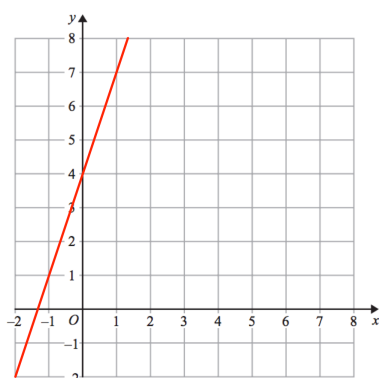
- (a) gradient of 3 and y-intercept of 6 (b) gradient of 2 and y-intercept of -1
(c) gradient of -4 and y-intercept of 3 (d) gradient of 8 and y-intercept of 4
(e) gradient of 1 and passing through (0, 4) (f) passing through (0, -2) with gradient 4
(g) gradient of -5 and passing through the origin.

Question 4:

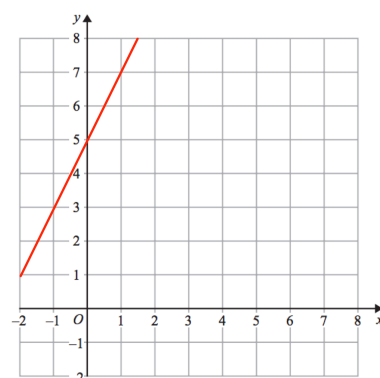
- (a) Does the point (2, 5) lie on the line $y = 3x - 1$?
(b) Does the point (4, 1) lie on the line $y = 3x + 1$?
(c) Does the point (3, 1) lie on the line $y = x - 3$?
(d) Does the point (5, 7) lie on the line $y = -3x + 22$?
(e) Does the point (-4, -8) lie on the line $y = -2x$?
(f) Does the point (-1, 8) lie on the line $y = 2x + 11$?
(g) Does the point (12, 60) lie on the line $y = 7x - 18$?

Question 5: Find the equation of each line

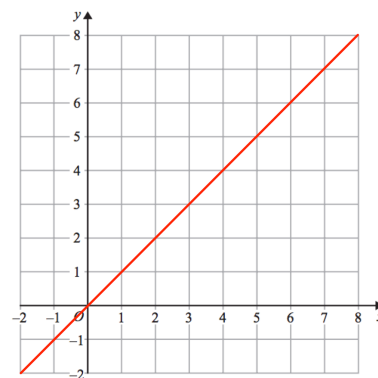
(a)



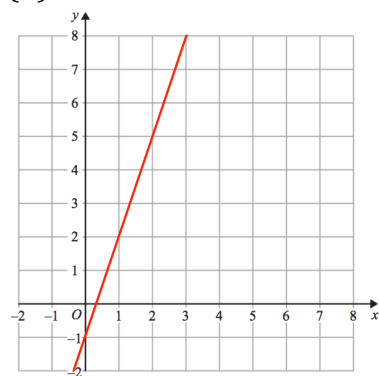
(b)



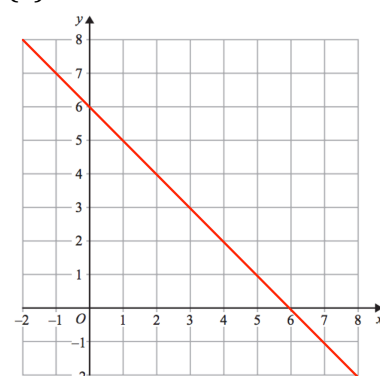
(c)



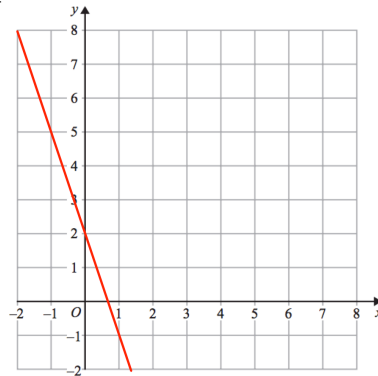
(d)



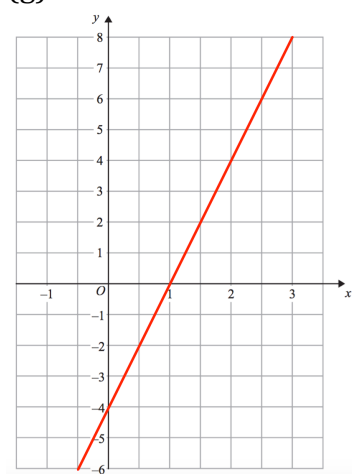
(e)



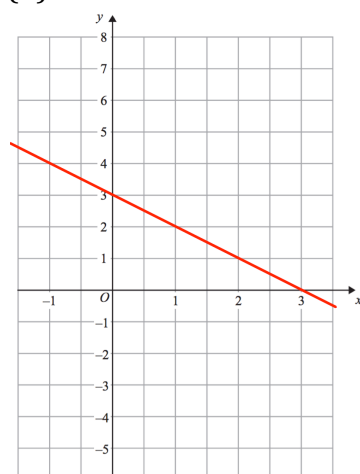
(f)



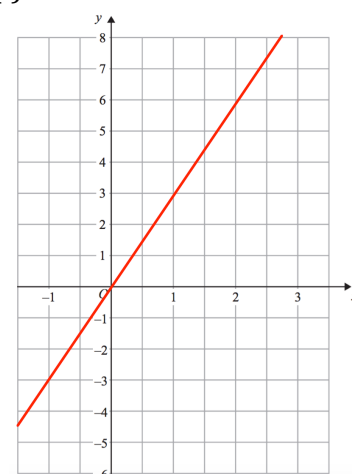
(g)



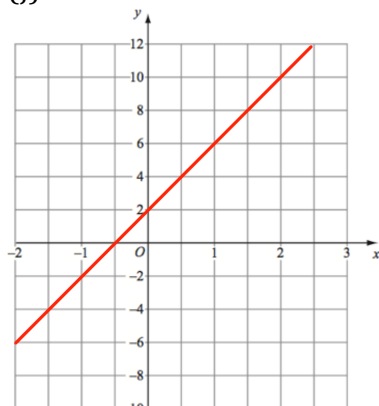
(h)



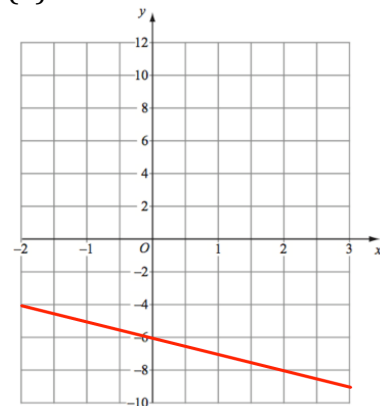
(i)



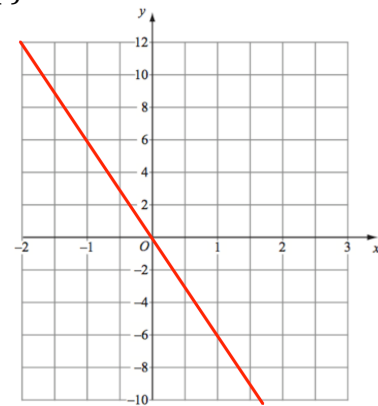
(j)



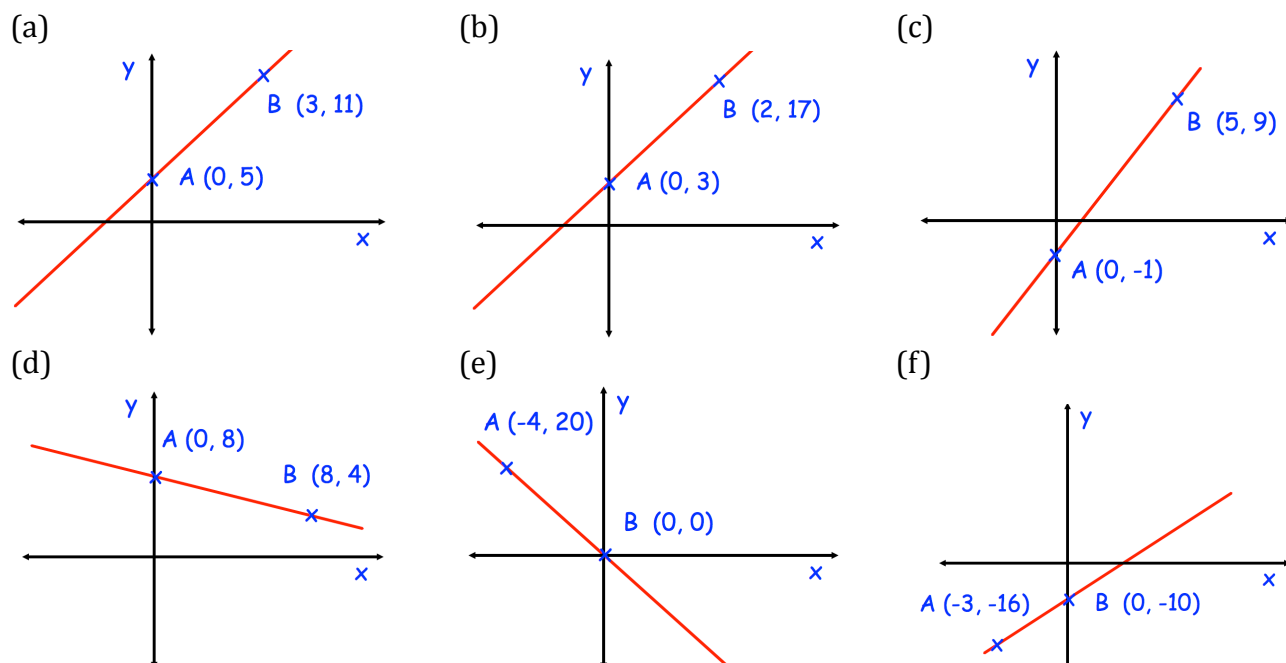
(k)



(l)



Question 6: Find the equation of each line below.



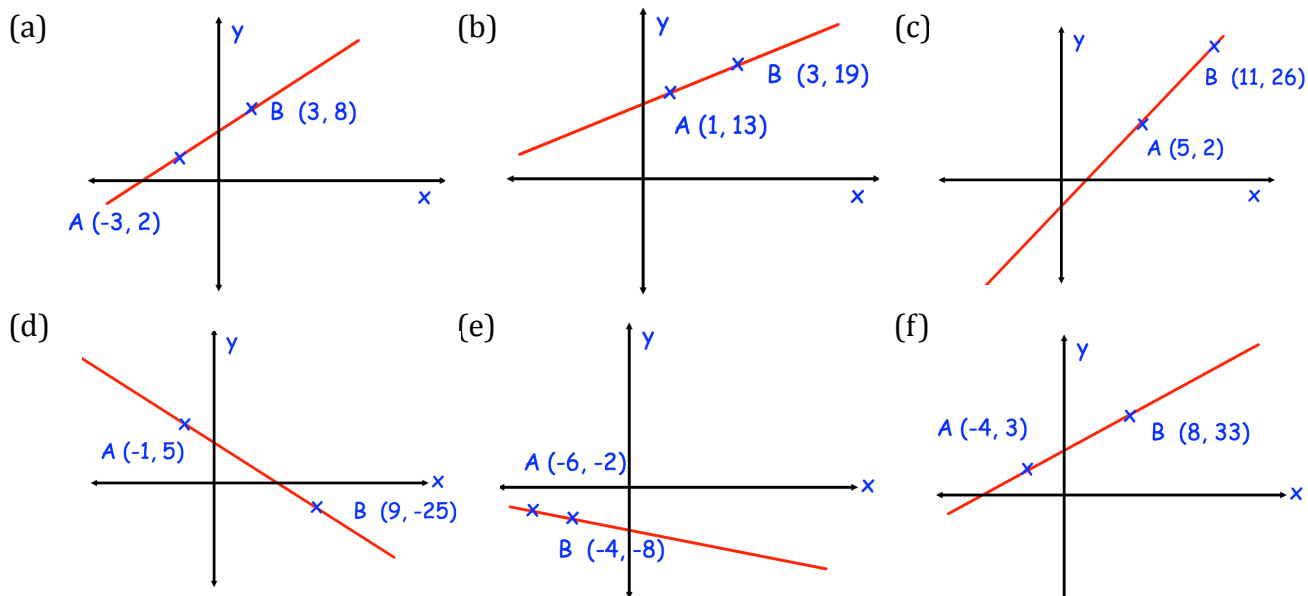
Question 7: Find the equation of the straight line that passes through the points

- | | | |
|------------------------|------------------------|---------------------------|
| (a) (0, 3) and (4, 19) | (b) (0, 2) and (6, 20) | (c) (0, 0) and (1, 4) |
| (d) (0, -9) and (9, 0) | (e) (0, -6) and (7, 8) | (f) (-8, -10) and (0, 14) |
| (g) (0, 2) and (10, 7) | (h) (-4, 1) and (0, 7) | (i) (-4, 0) and (0, 18) |

Question 8: Find the equation of the straight line that:

- (a) has a gradient of 4 and passes through the point (1, 10)
- (b) has a gradient of 2 and passes through the point (-3, 3)
- (c) has a gradient of 1 and passes through the point (5, 2)
- (d) has a gradient of -3 and passes through the point (-2, 8)
- (e) has a gradient of -5 and passes through the point (3, -1)
- (f) has a gradient of $\frac{1}{2}$ and passes through the point (4, 5)
- (g) has a gradient of $\frac{2}{5}$ and passes through the point (-5, -5)
- (h) has a gradient of $-\frac{2}{3}$ and passes through the point (9, 15)

Question 9: Find the equations of the lines below



Question 10: Find the equation of the straight line that passes through these pairs of points

- | | | |
|------------------------------|------------------------------|-------------------------------|
| (a) $(2, 5)$ and $(4, 11)$ | (b) $(-4, 2)$ and $(1, 7)$ | (c) $(-5, -8)$ and $(-4, -4)$ |
| (d) $(-1, -2)$ and $(-6, 3)$ | (e) $(-6, -4)$ and $(-3, 2)$ | (f) $(3, 5)$ and $(4, 1)$ |
| (g) $(-5, 4)$ and $(5, 2)$ | (h) $(1, 6)$ and $(5, 4)$ | (i) $(-10, -5)$ and $(-7, 4)$ |

Question 11: Find the coordinates where the following lines cross the x-axis

- | | | |
|--------------------|-----------------------|----------------------------|
| (a) $y = 2x + 6$ | (b) $y = -x + 4$ | (c) $y = 3x + 9$ |
| (d) $y = x - 5$ | (e) $y = 4x + 1$ | (f) $y = -2x + 10$ |
| (g) $y = -4x - 10$ | (h) $y = 5x + 3$ | (i) $y = \frac{1}{2}x + 3$ |
| (j) $x + y = 8$ | (k) $4x + 2y + 7 = 0$ | (l) $3x + 2y - 8 = 0$ |

Question 12: Find the gradients and the y-intercepts of each of these lines

- | | | |
|---------------------------------------|--|-----------------------------|
| (a) $x + y = 10$ | (b) $x - y = 4$ | (c) $2x + y = 6$ |
| (d) $3x - y = -1$ | (e) $8x + 2y + 9 = 0$ | (f) $5x - 2y - 4 = 0$ |
| (g) $7x = 1 - 2y$ | (h) $15y - 6x = 8$ | (i) $\frac{2}{3}x + 2y = 5$ |
| (j) $\frac{1}{5}y - \frac{1}{2}x = 1$ | (k) $\frac{2}{3}x + \frac{3}{4}y = 1\frac{1}{2}$ | |

Apply

Question 1: The point (5, -2) lies on which lines below

Line A	Line B	Line C
$y = x + 7$	$y = -3x + 13$	$y = 4x - 18$
Line D	Line E	
$y = -2x - 8$	$y = 2x - 12$	

Question 2: Do the points (1, 4), (4, 10) and (9, 20) lie in a straight line?

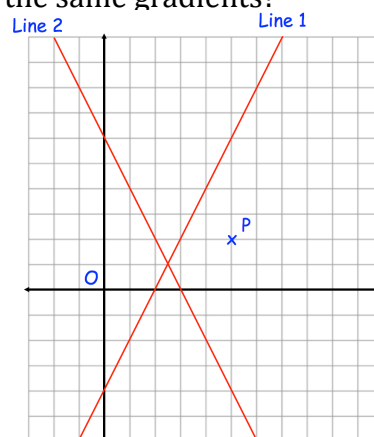
Question 3: A line has equation $y = 2x + 6$
 The line crosses the x-axis at the point A
 The line crosses the y-axis at the point B
 The point C has coordinates (1, 8)

- (a) Find the coordinates of the point A
- (b) Find the coordinates of the point B
- (c) Find the equation of the straight line passing through the points A and C.

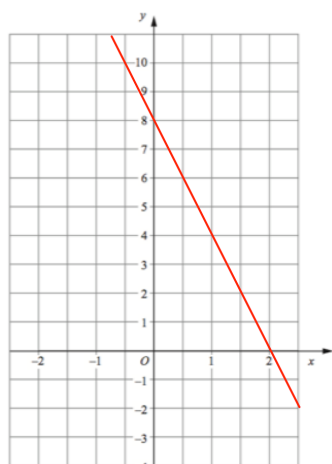
Question 4: Do the lines $y = 3x + 1$ and $4x - 2y + 3 = 0$ have the same gradients?

Question 5: Line 1 has equation $y = 3x - 12$

- (a) Find the coordinates of P
- (b) Find the equation of Line 2



Question 6: Lexi says the line below has an equation of $y = -2x + 8$
 Explain her mistake.



Answers



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