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 though (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 \( y = 7x - 18 \) ?

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Question 5: Find the equation of each line

(a) [Graph]

(b) [Graph]

(c) [Graph]

(d) [Graph]

(e) [Graph]

(f) [Graph]

(g) [Graph]

(h) [Graph]

(i) [Graph]

(j) [Graph]

(k) [Graph]

(l) [Graph]
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Question 6: Find the equation of each line below.

(a) [Image]
(b) [Image]
(c) [Image]
(d) [Image]
(e) [Image]
(f) [Image]

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 ½ and passes through the point (4, 5)

(g) has a gradient of ⅖ and passes through the point (−5, −5)  
(h) has a gradient of −⅔ and passes through the point (9, 15)

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Question 9: Find the equations of the lines below

(a) \[ y = \frac{3}{5}x - 3 \]
(b) \[ y = 3x + 19 \]
(c) \[ y = \frac{2}{5}x + 2 \]
(d) \[ y = -\frac{5}{2}x + 9 \]
(e) \[ y = -\frac{2}{3}x + 8 \]
(f) \[ y = \frac{1}{2}x + 3 \]

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) \(\frac{3}{2}x + 2y = 5\)
(j) \(\frac{1}{3}y - \frac{1}{2}x = 1\)
(k) \(\frac{3}{2}x + \frac{3}{4}y = 1\frac{1}{2}\)

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

\[ \begin{align*}
\text{Line A} & : y = x + 7 \\
\text{Line B} & : y = −3x + 13 \\
\text{Line C} & : y = 4x − 18 \\
\text{Line D} & : y = −2x − 8 \\
\text{Line E} & : y = 2x − 12
\end{align*} \]

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.