

Quiz: I can model with linear functions

Equations of a straight line: $f(x) = mx + c$, $ax + by + d = 0$, $(y - y_1) = m(x - x_1)$

Gradient: $m = \frac{y_2 - y_1}{x_2 - x_1}$

1. A linear function f is graphed below.

[4]

- (a) Write down it's slope.

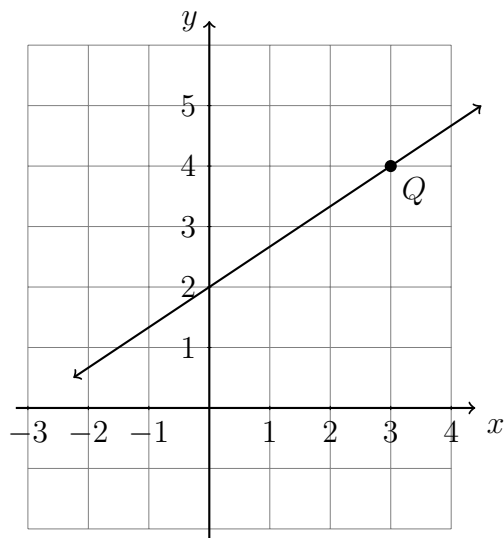
$m =$

- (b) Write down it's y -intercept.

$b =$

- (c) Write down the equation of the line.

- (d) State the coordinates of the point Q .



2. Write the linear equation $y + 5 = 2(x - 4)$ in the form $y = mx + c$.

[2]

3. A line has a gradient (slope) of $-\frac{2}{3}$ and passes through the point $(6, 2)$. Find the equation of the line in the form $y = mx + c$.

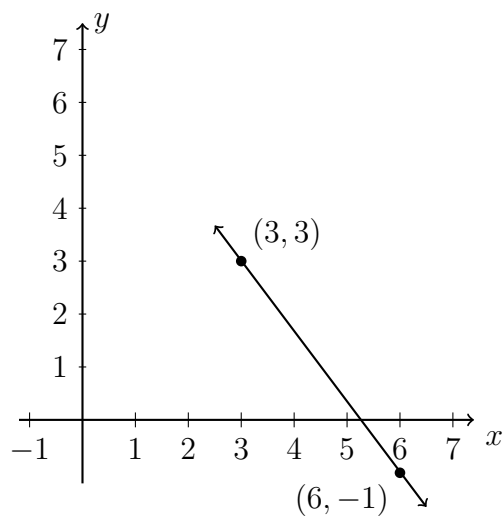
[3]

4. A line goes through the points $(3, 3)$ and $(6, -1)$.

[5]

(a) Find the gradient of the line.

(b) Find the equation of the line in the form $y = mx + c$.



5. Find the equation of the line through the points $(-2, 7)$ and $(6, 9)$. (in the form $y = mx + c$)

[5]

6. A function f is shown in the table.

[5]

x	-2	0	2	4	6
$f(x)$	-1	3	7	11	15

(a) Is f a linear function? Why or why not?

(b) Is f a direct variation? Explain.

(c) Find the gradient of the function.

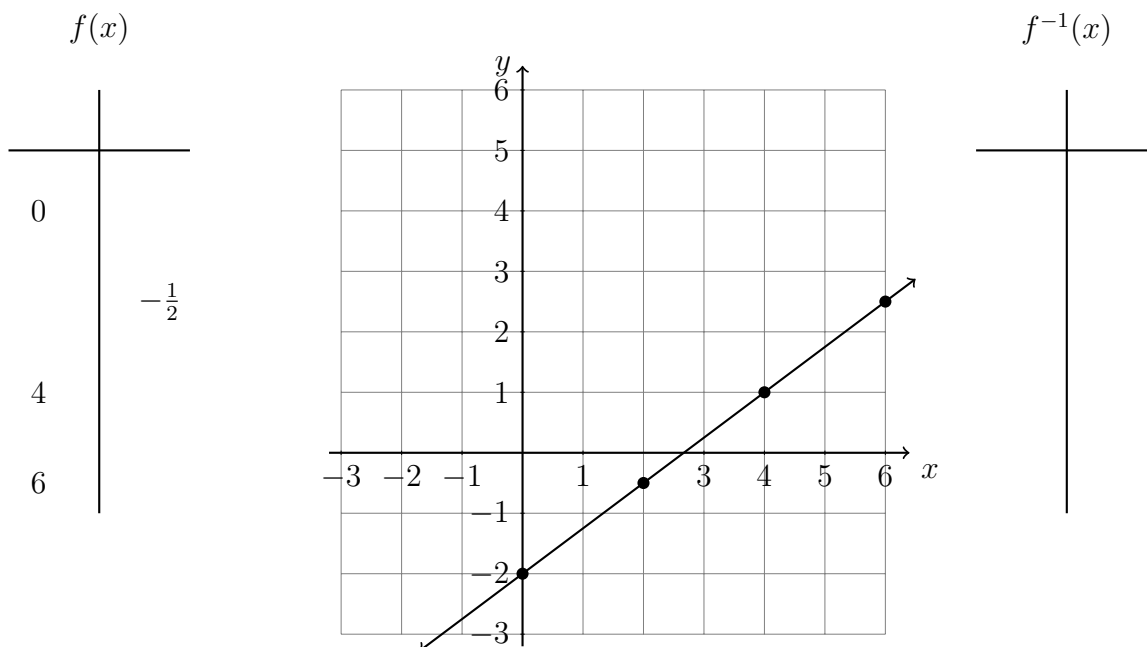
(d) Write down the equation of f in the form $y = mx + c$

(e) Complete the table of the inverse of f .

x					.
$f^{-1}(x)$.

7. A function $f(x) = \frac{3}{4}x - 2$ is graphed below. [3]

- (a) Complete the T-table of values for the function on the left.
 (b) Write down the values for the inverse function in the right T-table.
 (c) Draw the line for the inverse function on the graph.



8. Find the inverse function of $f(x) = \frac{3}{5}x - 6$ using algebraic methods. (state f^{-1} in the form $y = mx + c$) [3]

9. The function $f(x) = -x^2 + 6x - 6$ is shown on the graph.

[5]

- (a) Write down its vertex as an ordered pair.
- (b) Draw on the graph the function $g(x) = -x + 4$.
- (c) Find the two ordered pairs that satisfy both f and g .

