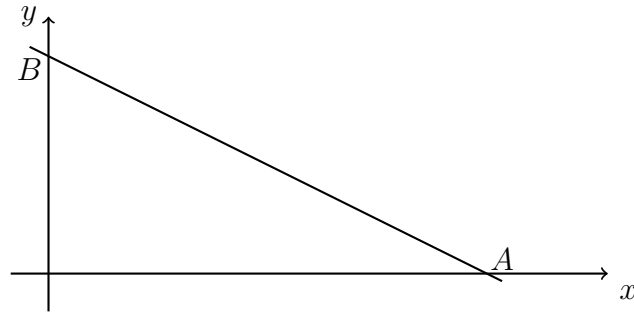


4.9 Do Now Quiz: Function operations, Linear equations

1. [Maximum mark: 9]

The diagram shows the straight line L_1 , which intersects the x -axis at $A(k, 0)$ and the y -axis at $B(0, 8)$. The gradient of L_1 is $-\frac{2}{3}$. *Diagram is not to scale*



- (a) Find the value of k . [2]
(b) Write down the coordinates of the midpoint M of A and B . [2]
(c) Write down the equation for the line L_1 . [2]
(d) The line L_2 is perpendicular to L_1 and passes through M . [3]
Find the equation for the line L_2 .

.....

.....

.....

.....

2. [Maximum mark: 7]

Let $f(x) = 3x + 7$ and $g(x) = 5x$, for $x \in R$.

- (a) Write down $g(2)$. [1]
- (b) Find $(f \times g)(x)$. [1]
- (c) Find $(f \circ g)(x)$. [1]
- (d) Write down $g^{-1}(10)$. [2]
- (e) Find $f^{-1}(x)$. [2]

.....

.....

.....

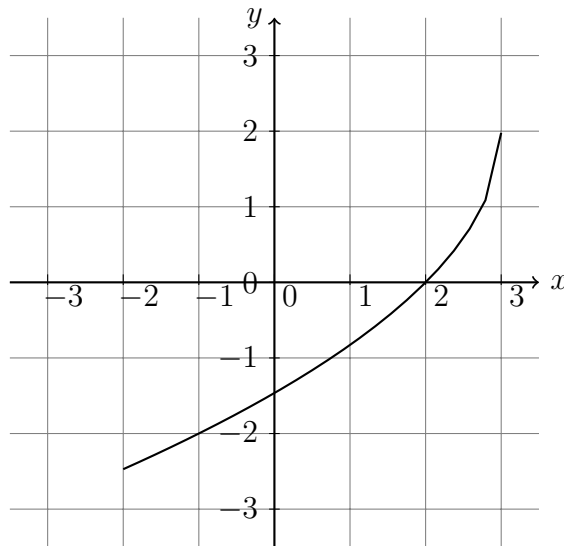
.....

.....

Name:

3. [Maximum mark: 6]

Early finishers: The diagram below shows the graph of a function f for $-2 \leq x \leq 3$.



- (a) Write down the value of $f(2)$. [1]
- (b) Write down the value of $f^{-1}(-2)$. [2]
- (c) Sketch the graph of f^{-1} on the grid. [3]

.....

.....

.....

.....

.....