FUNCTIONS AND GRAPHS   NON-CALCULATOR
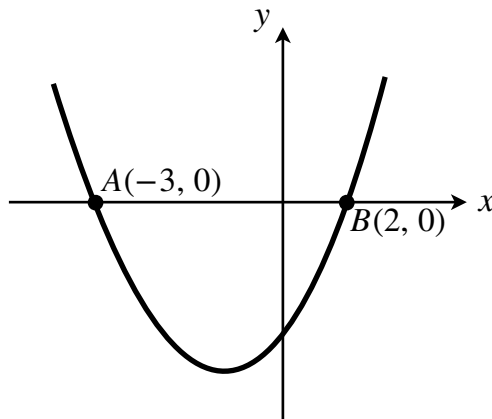
1) Functions $f(x) = 2x + 3$, $g(x) = \dfrac{1}{x}$ and $h(x) = 2 - x^2$ are defined on suitable domains. Work out the following.

a) $f(g(x))$ **b)** $f(h(x))$ **c)** $h(g(x))$ **d)** $g(g(x))$

2) Work out the inverse of the function $f(x) = \dfrac{4 + x}{3}$.

3) For the function $g(x) = \dfrac{6}{2x^2 + 5x - 12}$ what values of x cannot be in the domain of g.

4) Shown below is the graph of the function $y = f(x)$.

On separate graphs sketch the graph of **(a)** $y = -f(x + 1)$ and **(b)** $y = 2f(-x) + 1$. Clearly state the coordinates of the points A and B.