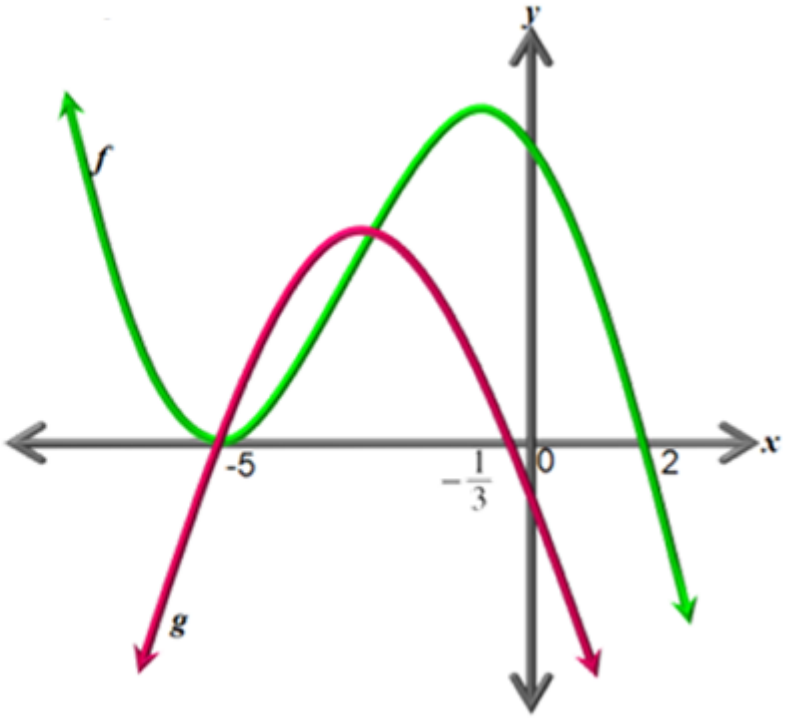
The sketch shows the graph of the following functions:

$f(x) = ax^3 + bx^2 - 5x + 50$
$g(x) = f'(x) = px^2 + qx + t$

The x-intercepts of f are (-5 ; 0) and (2 ; 0) and the x-intercepts of g are (-5 ; 0) and $\left(-\frac{1}{3} ; 0\right)$



a) Determine the value of $g(f(2))$

b) Calculate the average gradient of f over the interval $x \in [-5 ; 0]$

c) Determine the values of x for which $f''(x) < 0$