

11.11 Quiz: Tangent and normal lines to a function

Use your own notebook, but no calculators or computers

Find the derivative of each polynomial function

1. $f(x) = x^3 + 3x^2$

2. $g(x) = -x^4 + 3x^3 + 4x - 3$

Evaluate the function and its derivative for a given value of x

3. Given $f(x) = x^3 - 4x^2 + x + 5$

(a) Find $f(1)$

(b) Find $f'(1)$

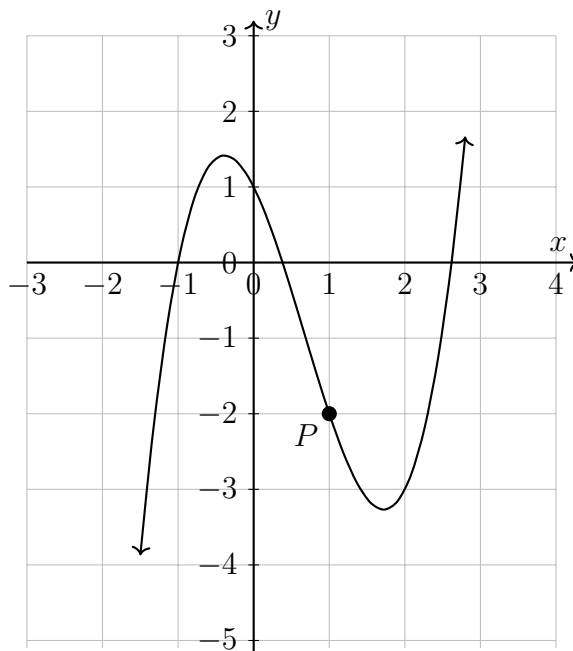
4. The graph shows the polynomial function $y = x^3 - 2x^2 - 2x + 1$. Its derivative is $\frac{dy}{dx} = 3x^2 - 4x - 2$.

(a) Write down the coordinates of the point P .

(b) Find the slope of the tangent line at P .

(c) Write down the equation of the tangent line at P .

(d) Draw the tangent line on the graph accurately with a straight edge.



5. The function $y = -x^2 - 3x + 2$ is graphed on the grid below. Find its derivative and the equations of the tangent and normal lines through point $(-3, 2)$. Draw the lines.

