

11.9 Pre-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. $f(x) = x^2 + 5x$

2. $f(x) = x^4 - 2x^3 + 7x^2 - 11$

Evaluate the function and its derivative at a given point

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

(a) Find $f(2)$

(b) Find $f'(2)$

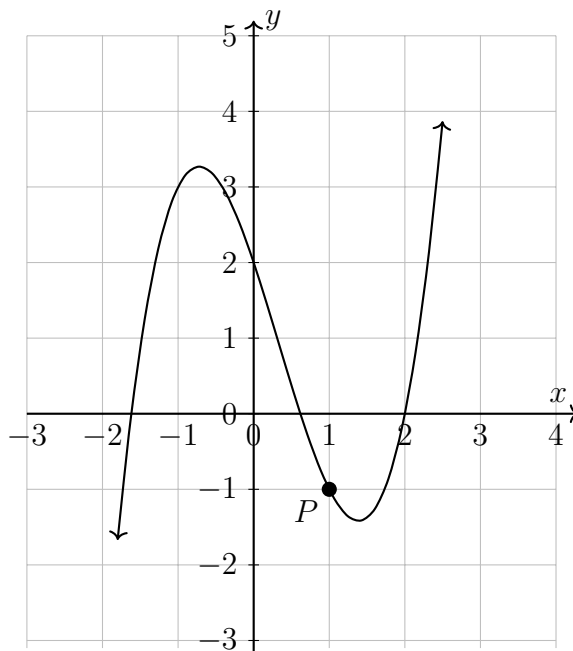
4. The graph shows the polynomial function $y = x^3 - x^2 - 3x + 2$. Its derivative is $\frac{dy}{dx} = 3x^2 - 2x - 3$.

(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 $(1, 5)$. Draw the lines.

