BECA / Huson / Unit 11: Calculus Name:
4 April 2023

11.4 Quiz: Derivatives

Use your own notebook, but no calculators or computers

Find the derivative of each polynomial function

1. $f(x) = x^3 + 4x^2$

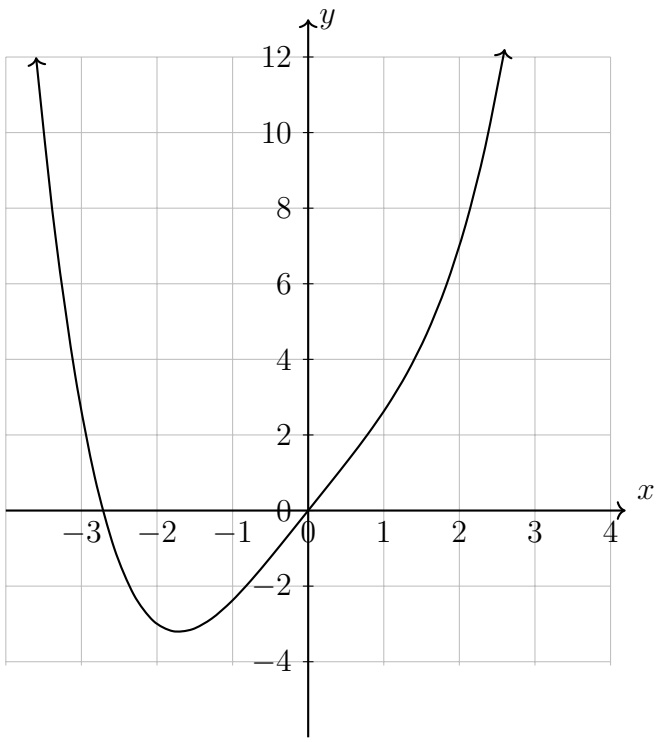
2. $f(x) = x^5 - 3x^4 + 2x^2$

Evaluate the function and its derivative at a given point

3. Given $f(x) = 2x^3 - 5x^2$
   (a) Find $f(1)$

   (b) Find $f'(1)$

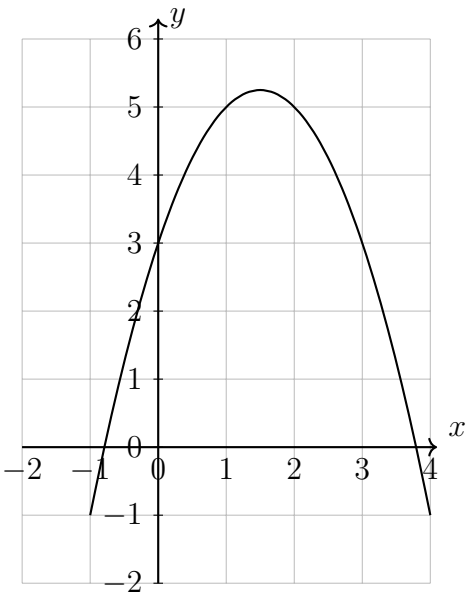
4. The graph shows the polynomial function $f(x) = 2x^4 + 5x$. Mark the portion of the function that is increasing.



5. A function is defined over the domain $-1 \leq x \leq 4$. The function, its derivative, and graph are given as:

$$y = -x^2 + 3x + 2$$

$$\frac{dy}{dx} = -2x + 3$$



(a) Find $\left.\frac{dy}{dx}\right|_{x=1}$

(b) Mark the portion of the function that is increasing.