

Introduction to Calculus

Power Rule for Differentiation

Worksheet 1

Exercise 1

Find the derivative (gradient function) for each of the following functions:

1. $f(x) = 4x^5$

2. $y = 3x^2$

3. $f(x) = 9x^7$

4. $y = 10x$

5. $f(x) = \frac{x^4}{2}$

6. $y = \frac{2}{5}x^{10}$

7. $f(x) = 2x$

8. $y = x$

Exercise 2

Find the derivative (gradient function) of each of the following functions:

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

2. $y = 9x^3 - 4x + 3$

3. $f(x) = \frac{x^8}{2} + x^7 - 5x + 10$

4. $y = 6x^3 - 2x^2 + x - 1$

5. $f(x) = 7 - 5x + 3x^2$

6. $y = 25 + \frac{x}{2}$