Introduction to Calculus

Power Rule for Differentiation

Worksheet 2

Exercise 1

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

1. $f(x) = \dfrac{3}{x}$

2. $y = \dfrac{1}{x^2}$

3. $f(x) = \dfrac{8}{x^3}$

4. $y = -\dfrac{3}{x^5}$

5. $f(x) = -\dfrac{4}{x}$

6. $y = -\dfrac{1}{2x^2}$

7. $f(x) = \dfrac{3}{4x^2}$

8. $y = \dfrac{3}{x^6}$

Exercise 2

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

1. $f(x) = 10x + \dfrac{3}{x^7}$

2. $y = 3 - \dfrac{5}{x^5}$

3. $f(x) = x^2 + \dfrac{1}{x}$

4. $y = 3x^2 - \dfrac{1}{x^2} + 1$

5. $f(x) = x - \dfrac{1}{x}$

6. $y = x^5 + 3x^2 - \dfrac{4}{x}$

7. $f(x) = 4 + \dfrac{1}{x^3} + \dfrac{1}{x^4}$

8. $y = 10x^2 + \dfrac{1}{x^4} - 20$