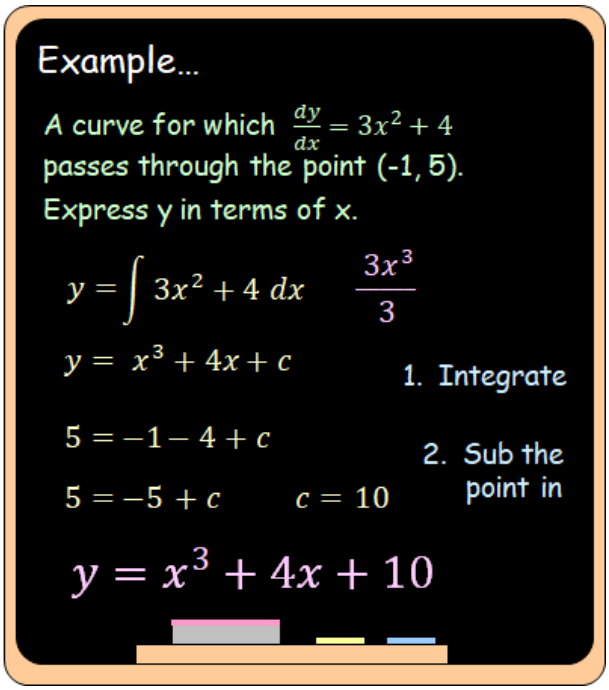
Outcome 1 – Solving Differential Equations

Example



Questions

Outcome 1 - Solving Differential Equations

Solve the following differential equations...

1. $\frac{dy}{dx} = 7 - 6x$ passing through (2, 1).
   Express y in terms of x.

2. $f'(x) = 8x^3 + 9$ passing through (1, 9).
   Find f(x).

3. $\frac{dy}{dx} = 3x^2 - 8x$ passing through (-1, 5).
   Express y in terms of x.

4. $f'(x) = 5x^2 + 11x + 2$ passing through (0, 0).
   Find f(x).

5. $\frac{dy}{dx} = x^3 + \frac{1}{x^6} - \frac{1}{6}$ passing through (1, 4).
   Express y in terms of x.

Answers

1 $y = 7x - 3x^2 - 1$

2 $f(x) = 2x^4 + 9x - 2$

3 $y = x^3 - 4x^2 + 10$

4 $f(x) = \frac{5x^3}{3} + \frac{11x^2}{2} + 2x$

5 $y = \frac{1}{4}x^4 - \frac{1}{5x^5} - \frac{1}{6}x + \frac{247}{60}$