

Solutions

Each answer shows the steps, then the **result**.

2.1

- $y = 2x^2 + C$; $5 = 2 + C \Rightarrow C = 3$; $y = 2x^2 + 3$

2.2

- $A = 7$

2.3

- $y = x^3 + C$; $-1 = 0 + C \Rightarrow C = -1$; $y = x^3 - 1$

3.1 B

- $10 = 4 + C \Rightarrow C = 6$

3.2

(a)

- $P = Ae^{0.5t}$

(b)

- $P(0) = A = 200$, so $P = 200e^{0.5t}$

(c)

- $P(4) = 200e^2 \approx 1478$

3.3

- $y \, dy = 6x \, dx$; $\frac{1}{2}y^2 = 3x^2 + C$; at $(0, 4)$: $8 = C$; $y = \sqrt{6x^2 + 16}$