

Solutions

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

2.1

- $\frac{1}{y} dy = 2x dx$

2.2

- $y dy = dx; \frac{1}{2}y^2 = x + C; y^2 = 2x + C_1$

2.3

- $\frac{1}{y} dy = 3 dx; \ln |y| = 3x + C; y = Ae^{3x}$

3.1 B

- $\int \frac{1}{y} dy = \ln |y|$

3.2

(a)

- $\frac{1}{y^2} dy = x dx; -\frac{1}{y} = \frac{x^2}{2} + C$

(b)

- $y = -\frac{1}{\frac{x^2}{2} + C} = \frac{-2}{x^2 + C_1}$

3.3

- $y dy = \cos x dx; \frac{1}{2}y^2 = \sin x + C; y^2 = 2 \sin x + C_1$