

10. [9 pts.]

(a) Find the number c for which $\int_1^c \frac{6}{x^2} dx = 2$. Show all work.

$$2 = \int_1^c \frac{6 dx}{x^2} = -\frac{6}{x} \Big|_1^c = 6 \left[1 - \frac{1}{c} \right] = 6 - \frac{6}{c}$$

$$\Rightarrow -4 = -\frac{6}{c} \Rightarrow c = \frac{6}{4} = \frac{3}{2}$$

Final answer to (a):

$$\frac{3}{2}$$

(b) Evaluate the indefinite integral $\int (1 + \sin x - 2e^x) dx$.

$$= x - \cos x - 2e^x + C$$

Final answer to (b):

$$x - \cos x - 2e^x + C$$