

$$\begin{aligned} I &= \frac{1}{3} \int \frac{1}{x + \frac{2}{3}} dx \\ &= \frac{1}{3} \log \left| x + \frac{2}{3} \right| + C_1 \\ &= \frac{1}{3} \log \left| \frac{1}{3} (3x + 2) \right| + C_1 \end{aligned}$$

$$\begin{aligned} &= \frac{1}{3} \log |3x + 2| + \log \frac{1}{3} + C_1 \\ &= \frac{1}{3} \log |3x + 2| + C \end{aligned}$$