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$$a) \int_0^1 \frac{dx}{x+4} = \int_0^1 (x+4)^{-1} dx$$

$$b) S = k m^{\frac{2}{3}}$$

when $m = 70$
 $S = 18,600 \text{ cm}^3$

$$18600 = k \cdot 70^{\frac{2}{3}}$$

$$18600 = 16.985 k$$

$$k = 1095.08438$$

when $m = 60$

$$S = 1095.08438 m^{\frac{2}{3}}$$

$$= 1095.08438 \cdot 60^{\frac{2}{3}}$$

$$S = 16783.47 \text{ cm}^3$$

$$c) \text{I } y = \ln(x^2 - a)$$

$$\frac{dy}{dx} = \frac{2x}{x^2 - a}$$

$$\text{II } y = \frac{x}{e^x}$$

d