

2.84
c1

$$(1) \int_0^1 \frac{x^2+x+2}{x+1} dx = \int_0^1 \left[\frac{x(x+1)}{x+1} + \frac{2}{x+1} \right] dx = \int_0^1 \left(x + \frac{2}{x+1} \right) dx =$$

$$\frac{x^2}{2} + 2 \ln|x+1| \Big|_0^1 = \frac{1}{2} + 2 \ln 2$$

$$(2) \int_0^a \frac{\ln nx}{\cos^2 x} dx = 1$$

$$- \int \frac{1}{t^2} dt = \frac{1}{t}$$

$$1 = \int_0^a \frac{\ln nx}{\cos^2 x} dx = \frac{1}{\cos x} \Big|_0^a = \frac{1}{\cos a} - 1 \quad \rightarrow \quad \begin{aligned} 2 \cos a &= 1 \\ \cos a &= \frac{1}{2} \\ (0 < a < 2 \text{ rad}) \quad a &= \frac{\pi}{3} \end{aligned}$$

$$\begin{aligned} t &= \cos x \\ dt &= -\sin x dx \end{aligned} \quad \text{no!}$$