

11.6 Natural logs

$$\log_e x = \ln x$$

$$\log_a n = \frac{\log_b n}{\log_b a}$$

$$\frac{x}{5} \quad 5^{2x} = 7^{x+1}$$

$$\ln 5^{2x} = \ln 7^{x+1}$$

$$\log_{10} x = \log x$$

$$2x \ln 5 = (x+1) \ln 7$$

$$2x (1.6094) = (x+1) 1.9459$$

$$3.2189x = 1.9459x + 1.9459$$

$$-1.9459x \quad -1.9459x$$

$$\underline{1.2730x = 1.9459}$$

$$1.2730$$

$$x \approx 1.5286$$