

$$\text{iii)} \quad 5^{x+3} = 2 \times 4^x$$

$$\log 5^{x+3} = \log(2 \times 4^x)$$

$$\log 5^{x+3} = \log 2 + \log 4^x$$

$$(x+3)\log 5 = \log 2 + x\log 4$$

$$(x+3)0.6990 = 0.3010 + 0.6021x$$

$$0.6990x + 2.097 = 0.3010 + 0.6021x$$

$$0.0969x = -1.796$$

$$\underline{x = -18.53}$$

②

$$\text{a)} \quad 11x^2 = -6x + 17$$

$$11x^2 + 6x - 17 = 0$$

a b c

$$x = \frac{-6 \pm \sqrt{(-6)^2 - 4 \times 11 \times (-17)}}{2 \times 11}$$

$$x = \frac{-6 \pm \sqrt{784}}{22}$$

$$x = \frac{-6 + \sqrt{784}}{22}$$

$$\underline{x = 1}$$

$$x = \frac{-6 - \sqrt{784}}{22}$$

$$\underline{x = -\frac{17}{11}}$$