

Question 2

$$a) \text{ii)} \quad 3^{x+5} = 2^x \times 6$$

$$\log_3 3^{x+5} = \log_3 2^x \times 6$$

$$(x+5) \log 3 = \log 2^x + \log 6$$

$$(x+5) \log 3 = x \log 2 + \log 6$$

$$(x+5) 0.477 = 0.301x + 0.778$$

$$0.477x + 2.385 = 0.301x + 0.778$$

$$0.176x + 2.385 = 0.778$$

$$0.176x = -1.607$$

$$x = \boxed{-9.13}$$

$$\div 0.176$$

$$64 - 16 + 2$$

$$b) \quad y = x^2 + 2x + 2$$

①

$$y = 2x^2 + 11x + 10$$

②

$$2x^2 + 11x + 10 = x^2 + 2x + 2$$

$$x^2 + 9x + 8 = 0$$

Move over

$$(x+8)(x+1)$$

Multiply Make 8 (8x1)
Add Move 8

$$x+8=0$$

$$x = -8$$

$$y = 50$$

?

$$x+1=0$$

$$x = -1$$

$$y = \textcircled{1}$$

$$-8^2 + 2(-8) + 2 =$$

$$+64 + 16 + 2 = 50$$

$$-1^2 - 2 + 2 = \textcircled{1}$$