

$$\text{iii) } 2 \log(x+3) = \log(x+5) + \log(x+7)$$

3rd law

$$\log(x+3)^2 = \log(x+5)(x+7)$$

$$(x+3)^2 = (x+5)(x+7)$$

$$(x+3)(x+3) = (x+5)(x+7)$$

$$6x+9 = 12x+35$$

$$6x+12x = 35$$

$$-6x = 26$$

$$x = -4.3$$

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

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

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

$$(x+5) \log 3 = 1/2$$

$$x+5 = 1/2 (\log 3)$$

$$x = 1/2 \log 3 - 5$$

$$x = -3.9$$

$$\text{C) } T^2 + 11T + 30$$

$$(T+6)(T+5)$$

$$\text{ii) } 4x^2 - 10ay^2$$

$$(2x)^2 - (10y)^2$$

$$\text{iii) } Tr - Ty + ur - uy$$

$$T(r-y) + u(r-y)$$