

$$h) 2 \log x - \log (x-16) = 2$$

$$\log \frac{x^2}{x-16} = 2$$

$$10^{\log \frac{x^2}{x-16}} = 10^2$$

$$\frac{x^2}{x-16} = 10^2$$

$$x^2 = 10^2 (x-16)$$

$$x^2 = 100x - 1600$$

$$x^2 - 100x + 1600 = 0$$

$$x = \frac{+100 \pm \sqrt{10000 - 4(1600)}}{2}$$

$$x = \frac{100 \pm \sqrt{10000 - 6400}}{2}$$

$$x = \frac{100 \pm \sqrt{3600}}{2} -$$

$$x = \frac{100 \pm 60}{2}$$

$$\begin{aligned} &\rightarrow x_1 = 30 \\ &\rightarrow x_2 = 20 \end{aligned}$$

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

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

$$\cancel{10} \log(5x-3)^2 (2x+3)^3 = 10^2$$

$$(5x-3)^2 (2x+3)^3 = 10^2$$