3. Given that

$$\log_2(x+3) + \log_2(x+10) = 2 + 2\log_2 x$$

(a) show that

$$3x^2 - 13x - 30 = 0$$

(3)

(b) (i) Write down the roots of the equation

$$3x^2 - 13x - 30 = 0$$

(ii) Hence state which of the roots in part (b)(i) is not a solution of

$$\log_2(x+3) + \log_2(x+10) = 2 + 2\log_2 x$$

giving a reason for your answer.

(2)