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(2)

$$a) i) \frac{2x+3}{6} = \frac{x}{3} + \frac{5x-1}{6} \quad \text{Common Factor 6}$$

$$6\left(\frac{2x+3}{6}\right) = \frac{6x}{3} + 6\left(\frac{5x-1}{6}\right)$$

$$1(2x+3) = 2x + 1(5x-1)$$

$$2x+3 = 2x + 5x - 1$$

$$2x+3 = 7x-1$$

~~2x + 2x~~

$$3+1 = 7x-2x$$

$$4 = 5x$$

$$x = \frac{5}{4}$$

$$ii) 2\ln(x+6) = \ln(x+3) + \ln(x+7)$$

$$\ln(x+6)^2 = \ln(x+3)(x+7)$$

$$x^2 + 12x + 36 = x^2 + 10x + 21$$

$$12x - 10x = 21 - 36$$

$$2x = -15$$

$$x = -7.5$$