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iii.]

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

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

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

$$25x^2 + 15x + 15x + 9 = x^2 + x + 2x + 2$$

$$24x^2 + 30x + 9 = 3x + 2$$

$$24x^2 + 27x = 2 - 9$$

$$24x^2 + 27x - 7 = 0$$

$$24x^2 + 27x - 7 = 0$$

$$x = \frac{-30 \pm \sqrt{30^2 - 4 \times 24 \times -7}}{2 \times 24}$$

115.7

$$x = \frac{-27 \pm \sqrt{27^2 - 4 \times (24) \times (-7)}}{48}$$

$$-0.41$$

$$x = \frac{-27 - \sqrt{27^2 - 4 \times (24) \times (-7)}}{48}$$

$$-0.72$$