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$$\frac{x+1}{2x+5} = \frac{x+3}{3x+4}$$

$$(x+1)(3x+4) = (x+3)(2x+5)$$

$$3x^2 + 4x + 3x + 4 = 2x^2 + 5x + 6x + 15$$

$$3x^2 + 7x + 4 = 2x^2 + 11x + 15$$

$$3x^2 - 2x^2 + 7x - 11x + 4 - 15 = 0$$

$$x^2 - 4x - 11 = 0$$

comparing with

$$ax^2 + bx + c = 0$$

$$a = 1, b = -4, c = -11$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(-11)}}{2 \times 1}$$

$$x = \frac{4 \pm \sqrt{16 + 44}}{2}$$

$$x = \frac{4 \pm \sqrt{60}}{2}$$

$$x = \frac{4 \pm \sqrt{4 \times 15}}{2}$$

$$x = \frac{4 \pm 2\sqrt{15}}{2}$$

$$x = \frac{2 \pm \sqrt{15}}{1}$$

$$x = 2 \pm \sqrt{15} \text{ Ans.}$$