

PROBLEMAS DE ECUACIONES DE SEGUNDO GRADO

Problema 138:

Resolver la ecuación

$$3x - \frac{4}{3x+1} = -\frac{11}{3}$$

Solución Problema 138:

$$3x - \frac{4}{3x+1} = -\frac{11}{3}$$

$$\frac{3x(3x+1) - 4}{3x+1} = -\frac{11}{3}$$

$$\frac{9x^2 + 3x - 4}{3x+1} = -\frac{11}{3}$$

$$3 \cdot (9x^2 + 3x - 4) = -11 \cdot (3x + 1)$$

$$27x^2 + 9x - 12 = -33x - 11$$

$$27x^2 + 9x - 12 + 33x + 11 = 0$$

$$27x^2 + 42x - 1 = 0$$

$$x = \frac{-42 \pm \sqrt{1764 + 108}}{54} = \frac{-42 \pm \sqrt{1872}}{54} = \frac{-42 \pm \sqrt{2^4 \cdot 3^2 \cdot 13}}{54} =$$

$$= \frac{-42 \pm 2^2 \cdot 3\sqrt{13}}{54} = \frac{-7 \pm 2\sqrt{13}}{9}$$

$$x_1 = \frac{-7 + 2\sqrt{13}}{9}$$

$$x_2 = \frac{-7 - 2\sqrt{13}}{9}$$