Ejercicio:

$$\frac{(x+3)(x-2)}{3} - 2x = 3(x-1)^2 + \frac{5x^2}{3} \tag{1}$$

Desarrollo:

$$\begin{aligned}
x^2 - 2x + 3x - 6 - 6x &= 9(x^2 - 2x + 1) + 5x^2 \\
x^2 - 5x - 6 &= 9x^2 - 18x + 9 + 5x^2 \\
13x^2 - 13x + 15 &= 0 \\
13x^2 - 13x + 13 + 2 &= 0 \\
13(x^2 - x + 1) + 2 &= 0 \\
x^2 - x + 1 + \frac{2}{13} &= 0 \\
x^2 - x + \frac{15}{13} &= 0
\end{aligned} \tag{2}$$

Resolvente:

$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \tag{3}$$

$$x_{1,2} = \frac{1 \pm \sqrt{(-1)^2 - 4 \cdot 1 \cdot \frac{15}{13}}}{2}$$

$$x_{1,2} = \frac{1 \pm \sqrt{\frac{13-60}{13}}}{2}$$

$$x_{1,2} = \frac{1}{2} \pm i\frac{\sqrt{\frac{47}{13}}}{2}$$

$$x_{1,2} = \frac{1}{2} \pm i\frac{\sqrt{47} \cdot \sqrt{13}}{2\sqrt{13} \cdot \sqrt{13}}$$

Resultado:

$$x_1 = \frac{1}{26}(13 + i\sqrt{611}) \qquad x_2 = \frac{1}{26}(13 - i\sqrt{611}) \tag{4}$$