1.4 Intersection of Two Lines

Example 1

Find the point of intersection of the two lines

\[ y = \frac{1}{4} x - 5, \quad \frac{27}{4} x + 3y = 9 \]

\[ \text{X-INT: } y = 0 \quad \frac{-27}{4} x = 9 \]
\[ x = \frac{-36}{27} = \frac{-4}{3} \]

\[ \text{Y-INT: } x = 0 \quad 3y = 9 \]
\[ y = 3 \]
\[ (0, 3) \]

GUESS \((-4, -6)\)

CHECK:\n\[ y = \frac{1}{9} x - 5 \]
\[ -6 = \frac{1}{9} (-4) - 5 \]
\[ -6 = -6 \checkmark \]

SO \((-4, -6)\) IS THE INTERSECTION