Math 1050-002, Professor David Black. Gauss-Jordan Elimination Guide.
Anything in a green box (solid line) will be entered into ALEKS. Anything in a red box (dot/dash line) is just helpful. Also, notice that we carry the completed matrix from one step onto the next unless otherwise stated.

My system: $\begin{cases} \underbrace{\_\_}_{(1)} x + \underbrace{\_\_}_{(2)} y = \underbrace{\_\_}_{(3)} \\ \underbrace{\_\_}_{(4)} x + \underbrace{\_\_}_{(5)} y = \underbrace{\_\_}_{(6)} \end{cases}$ Augmented Matrix: $\boxed{\left[\begin{array}{cc|c} \underbrace{\_\_}_{(1)} & \underbrace{\_\_}_{(2)} & \underbrace{\_\_}_{(3)} \\ \underbrace{\_\_}_{(4)} & \underbrace{\_\_}_{(5)} & \underbrace{\_\_}_{(6)} \end{array}\right]}$

Use WolframAlpha row reduce $\{\{\underbrace{\_\_}_{(1)}, \underbrace{\_\_}_{(2)}, \underbrace{\_\_}_{(3)}\}, \{\underbrace{\_\_}_{(4)}, \underbrace{\_\_}_{(5)}, \underbrace{\_\_}_{(6)}\}\}$

Result: $\begin{pmatrix} 1 & 0 & \square \\ 0 & 1 & \square \end{pmatrix}$

There will be numbers where I have boxes. These will give you a way to check if you're on the right track.
Your first matrix here should be the same as the "Augmented Matrix" above.

$\underbrace{\square}_{(1)} \times \left[\begin{array}{cc|c} \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right] \to \boxed{\left[\begin{array}{cc|c} 1 & \_ & \_ \\ \_ & \_ & \_ \end{array}\right]}$ which is $\boxed{\underbrace{\square}_{(1)} \cdot R_1 \to R_1 \quad (1)}$

*recipr–ocal of*

$\underbrace{\square}_{(2)} \times \left[\begin{array}{cc|c} 1 & \_ & \_ \\ \_ & \_ & \_ \end{array}\right] \to \left[\begin{array}{cc|c} \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right]$ which is $\underbrace{\square}_{(2)} \cdot R_1 \to \text{Temporary } R_1$

*opp (neg) of*

After this, we add the two rows together and make it our new Row 2.

$\left[\begin{array}{cc|c} \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right] + \left[\begin{array}{cc|c} \_ & \_ & \_ \\ \_ & \_ & \_ \end{array}\right] \to \boxed{\left[\begin{array}{cc|c} 1 & \_ & \_ \\ 0 & \_ & \_ \end{array}\right]}$

*Don't need temp any more, so we take the top from* (1)

Temporary $R_1 + R_2 \to R_2$

All together, this is $\boxed{\underbrace{\square}_{(2)} \cdot R_1 + R_2 \to R_2 \quad (2)}$

$\underbrace{\square}_{(3)} \times \left[\begin{array}{cc|c} 1 & \_ & \_ \\ 0 & \_ & \_ \end{array}\right] \to \boxed{\left[\begin{array}{cc|c} 1 & \_ & \_ \\ 0 & 1 & \_ \end{array}\right]}$

*recipr–ocal of*

You can now check the bottom row with your result

This happens to be $\boxed{\underbrace{\square}_{(3)} \cdot R_2 \to R_2 \quad (3)}$

$\underbrace{\square}_{(4)} \times \left[\begin{array}{cc|c} 1 & \_ & \_ \\ 0 & 1 & \_ \end{array}\right] \to \left[\begin{array}{cc|c} 1 & \_ & \_ \\ 0 & \_ & \_ \end{array}\right]$ which is $\underbrace{\square}_{(4)} \cdot R_2 \to \text{Temporary } R_2$

*opp (neg) of*

Now, we add the two rows together and make it our new Row 1.

$\left[\begin{array}{cc|c} 1 & \_ & \_ \\ 0 & \_ & \_ \end{array}\right] + \left[\begin{array}{cc|c} 1 & 0 & \_ \\ 0 & \_ & \_ \end{array}\right] \to \boxed{\left[\begin{array}{cc|c} \_ & \_ & \_ \\ 0 & 1 & \_ \end{array}\right]}$ or $\boxed{\underbrace{\square}_{(4)} \cdot R_2 + R_1 \to R_1}$

*Don't need temp any more, so we take the bottom from* (3)

This gives us our answer, which we check with our WolframAlpha result.

$\left[\begin{array}{cc|c} 1 & 0 & \_ \\ 0 & 1 & \_ \end{array}\right] \quad \boxed{x = \_\_ \quad y = \_\_}$

Result: $\begin{pmatrix} 1 & 0 & \square \\ 0 & 1 & \square \end{pmatrix}$