

# 9/15 Notes

AZ

QOB: 4, 5, 8, 9

## goal

- understand graph, sub, elimination
- when to use each.

## Notes

### • elimination

ex  $6x - 5y = 0$ ,  $x - y = -1$

① line them up ~~and~~

$$\begin{array}{r} 6x - 5y = 0 \\ x - y = -1 \end{array} \left. \vphantom{\begin{array}{r} 6x - 5y = 0 \\ x - y = -1 \end{array}} \right\} \begin{array}{l} \text{make sure} \\ \text{variables match} \end{array}$$

- ② I want to cancel a variable they need different sign but same #  
so if I want to cancel  $y$ , I need the second line to be  $+5y$  so I'm going to multiply by  $-5$

$$\begin{array}{r} 6x - 5y = 0 \\ (x - y = -1) \cdot -5 \end{array}$$

$$\begin{array}{r} 6x - 5y = 0 \\ -5x + 5y = 5 \end{array} \quad \begin{array}{l} * \text{everything in row} \\ x \text{ by } -5 \end{array}$$

③ now add the rows

$$\begin{array}{r} 6x - 5y = 0 \\ -5x + 5y = 5 \\ \hline x = 5 \end{array}$$

④ solve for  $y$ :

$$\begin{array}{r} x - y = -1 \\ 5 - y = -1 \\ -y = -6 \\ y = 6 \end{array}$$

answer: (5, 6)