

I can create a math model for a real life situation using system of equations in standard form and a graph.

More Graphs of Linear Systems (Standard Form: $Ax + By = C$)

We are going to revisit some situations where you have already written the equations. You can refer back to your previous assignments to help you.

Example 1: You are running a concession stand at the basketball game. You sell hotdogs for \$1 and sodas for \$2. You sold a total of 120 items. At the end of the night, you made \$200.

Define your variables: x : hotdogs y : sodas

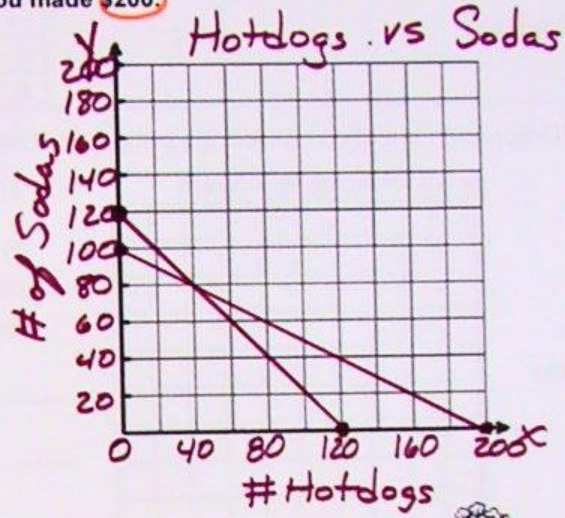
Write a system of equations:
 $x + y = 120$
 $1x + 2y = 200$

Find the x-intercept and y intercept for both equations.

Eq. 1: $(0, 120)$ and $(120, 0)$ $\begin{array}{r|l} x & y \\ \hline 0 & 120 \\ 120 & 0 \end{array}$

Eq 2: $(0, 100)$ and $(200, 0)$ $\begin{array}{r|l} x & y \\ \hline 0 & 100 \\ 200 & 0 \end{array}$

Graph your system on the same coordinate grid. (Hotdogs, Sodas) Use an interval of 20 on the x-axis and 20 on the y-axis



State the coordinates of intersection. Explain what these coordinates tell you about the situation.
 $(40, 80)$ 40 hotdogs and 80 Sodas total
120 items and \$200 ($\$40 + \$160 =$)



Example 2: Beaumont is sponsoring a pancake dinner to raise money for a field trip. Each adult ticket will cost \$20 and each child's ticket will cost \$10. You estimate a total of 70 tickets to be sold. At the end of the night, you made \$900.

Define your variables: x : adults y : child's

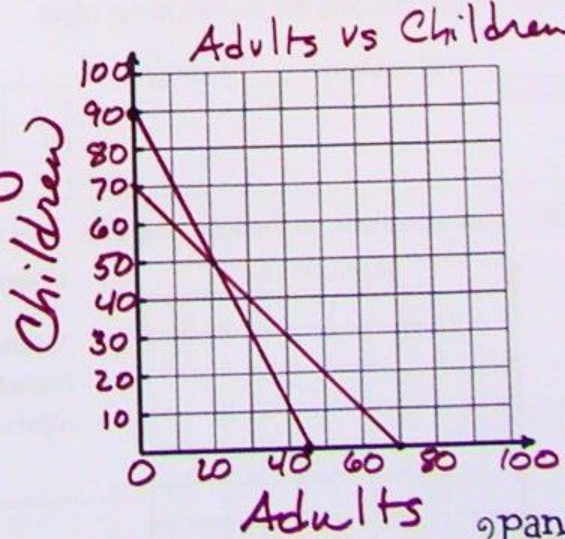
Write a system of equations:
 $x + y = 70$
 $20x + 10y = 900$

Find the x-intercept and y intercept for both equations.

Eq. 1: $(0, 70)$ and $(70, 0)$

Eq 2: $(0, 90)$ and $(45, 0)$

Graph your system on the same coordinate grid. (Adults, Children) Use an interval of 10 on the x-axis and 10 on the y-axis



State the coordinates of intersection. Explain what these coordinates tell you about the situation.
 $(20, 50)$ 20 Adults i 50 children
totalled 70 tickets i \$900 ($400 + 500$)

