2. Ken and Randy are flying kites. Ken's kite is 40 meters above the ground and rising 10 meters per minute. Randy's kite is 160 meters above the ground and is dropping at a rate of 5 meters per minute.

a) Identify the variables. x: *time*
 y: *height*

b) Write a system of equations to determine when the kites will be at the same height and what that height will be.

Ken: $y = 10x + 40$

Randy: $y = -5x + 160$

c) Graph the system of equations.
Label your x-axis and y-axis. State the solution.
$(8, 120)$

d) Explain your solution in context of the problem.
In 8 minutes, both kites will be 120 meters *minutes*

3. At the carnival, corn dogs are one price and cotton candy is another. Melissa buys 3 corn dogs and 1 cotton candy for $15. Scott buys 1 corn dog and 4 cotton candies for $16.

a) Identify the variables. x: *cost of corn dog*
 y: *cost of cotton candy*

b) Write a system of equations to determine the cost of a corn dog and the cost of cotton candy.

Melissa: $3x + 1y = 15 \rightarrow y = -3x + 15$

Scott: $x + 4y = 16$
$4y = -x + 16$
$y = -\frac{1}{4}x + 4$
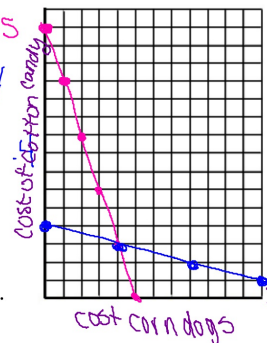
c) Graph the system of equations.
Label your x-axis and y-axis. State the solution.
$(4, 3)$

d) Explain your solution in context of the problem.
corn dogs cost $4 & cotton candy costs $3

4. NMS had a fundraiser selling plants. They sold a total of 36 plants. Each tomato plant cost $4 and each each cherry tomato plant cost $2. NMS made a total of $80.
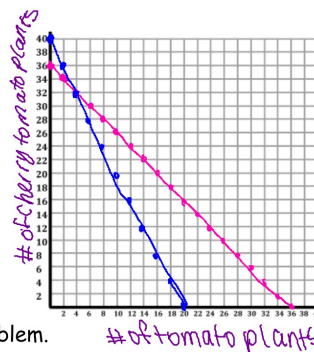
a) Identify the variables. x: *# of tomato plants*
 y: *# of cherry tomato plants*

b) Write a system of equations to determine how many tomato plants and cherry tomato plants were sold.

Total Plants:
$x + y = 36 \rightarrow y = -x + 36$

Total $: $4x + 2y = 80$
$y = -2x + 40$ $2y = -4x + 80$

c) Graph the system of equations.
Label your x-axis and y-axis.
State the solution.
$(4, 32)$
 x y

d) Explain your solution in context of the problem.
They sold 4 tomato plants & 32 cherry tomato plants