1. The base pay of a pizza boy delivery person is $125 a week. They also earn a $3 delivery fee on any sale they deliver. Write an equation to represent the total earnings for a week.

$$Y = 3x + 125$$

B. How much do they make if they deliver 72 deliveries of pizza in one week?

$$3(72) + 125 \qquad \boxed{\$341}$$

C. If Jess had a paycheck that was $248, how many deliveries did Jess make?

$$248 = 3x + 125 \qquad \boxed{41 \text{ deliveries}}$$

2. The junior class holds a car wash to raise money. A local supplier donates all the supplies needed. A wash for a car costs $5, where a wash for a truck costs $6. Write an equation to relate the number of cars and trucks the students must wash to raise at least $650. How many trucks must they wash if 32 cars come to the car wash?

$$5C + 6T \geq 650$$
$$5(32) + 6T \geq 650$$

$$T = 81.67$$
$$\boxed{82 \text{ trucks}}$$

3. You are sent to the party store to buy sliced salami and sliced cheese for your Super Bowl Party where the Patriots are playing the Lions (yea right!). You collected $74 from everyone at the party to spend on the salami and cheese. If salami costs $2.09 a pound and cheese costs $1.49 a pound, how much cheese can you buy if you need 12 pounds of salami?

$$2.09S + 1.49C = 74$$
$$2.09(12) + 1.49C = 74$$
$$\boxed{C = 32.83 \text{ lbs}}$$

4. A tire dealer sells Off-road tires for $129 a tire and Racing tires for $99 a tire. The dealer hopes to raise his sells from the previous month of $3240 to at least $3780. How many Off-road tires does he need to sell to reach his new goal if he already sold 20 racing tires this month?
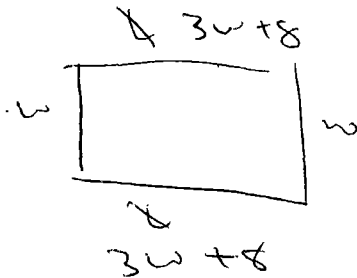
$$129T + 99R = 3780$$
$$129T + 99(20) = 3780$$
$$T = 13.9 \qquad \boxed{14 \text{ tires}}$$

5. The perimeter of a rectangle is 120 meters. The length of the rectangle is 8 more then 3 times the width. Find the dimensions of the rectangle. Hint: The perimeter equation is P = 2W + 2L

$3w+8$

$3w+8$

$120 = w + w + 3w + 8 + 3w + 8$

$120 = 8w + 16$

$w = 13 \qquad L = 47$

6. Two hundred and twenty five tickets were sold for the Wizard of Oz School Play, for a total of $1405. Adults were charged $7.50 and students $5.00. How many adults and students attended?

7. A candle is lit and begins to burn. Its original height is 12 in. After 30 minutes the height of the candle is 8 inches.

A. Write an equation that relates the height of the candle to the time it has been burning, using H for height and T for time.

$(0, 12) \qquad (30, 8) \qquad \dfrac{8-12}{30-0} \qquad \dfrac{-4}{30}$

$H = \dfrac{-4}{30}T + 12$

B. How many minutes after the candle is lit, will it burn out? Hint: What's the height when it burns out?

$0 = \dfrac{-4}{30}T + 12$

$T = 90 \text{ mins}$

8. A pool is being filled with a garden hose. I periodically check the amount of water in the pool. After 1 hour there is 45 gallons in the pool. After 4 hours, there is 85 gallons in the pool.

A. Write an equation that relates the amount of gallons in the pool, G, and how long it takes the pool to fill up, T.

$(1, 45) \qquad (4, 85) \qquad \dfrac{85-45}{4-1} = \dfrac{40}{3}$

$Y = 13.\overline{33}x + 31.\overline{67}$

$13.\overline{33}$

$Y = 13.33x + 31.\overline{67}$

B. Interpret the slope and y-intercept in context of the problem.

13.33 gallons are added each hour | the pool had 31.67 gallons in it to begin.

C. If the pool requires 300 gallons, how long before it fills up?

$300 = 13.\overline{33}x + 31.\overline{67}$

$x = 20 \text{ hours}$