Notes 1

r each problem, define the variables and then write a system of equation then solve.

1) Katherine is deciding which catering company she should use for Mom's 50th birthday party. At Bashful's Birthday Blast there is a fee of \$20.00 and a charge of \$9.00 per person. At Bertha's Ballroom Blitz there is a fee of \$100 and a charge of \$5.00 per person. For how many people will the cost become equal? What is that x = total cost Edentify the Variables: X= # of people

Bashfuls

y = 20+9x Bertha's Y=100+5x

$$20+9x = 100+5x$$

4x = 80 x=20

(20, 200)

At 20 people it will Cost \$200

2) Two companies sell stock shares on Wall Street. Losers Incorporated stock starts with a value of \$39.63 and loses \$0.08 for each new stockholder. The "Be Rich with Us" Corporation starts with a value of \$24.45 and gains \$0.03 in value for each new stockholder. At how many new stockholders will the value be equal? What is that value? (Solve by graphing)

X = Stockholders Y= Valle

y= 39.63 - 0.08 x Be Rich Y= 24.45+0.03x (138, 28.6)

at 138 Stockholders both stocks will be worth \$28.60

3) Farmer Peter and Farmer Paula are picking apples from their apple trees. Farmer Peter has already picked 287 apples. Farmer Peter picks another 5 apples each minute. Farmer Paula has already picked 154 apples. Farmer Paula picks another 6 apples each minute. After how many minutes will the number of apples be the same? How many apples would each farmer have picked? (Solve by graphing and algebraically)

X = each minute

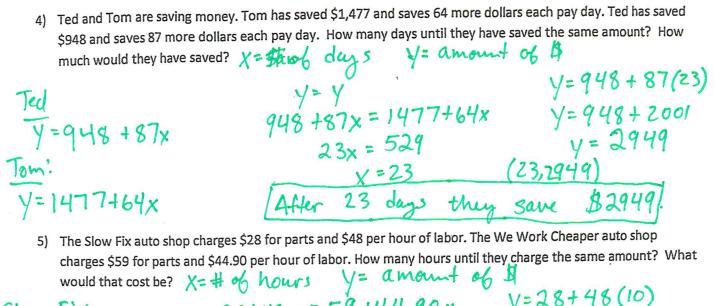
133 = X

V= 287+5X

(133, 952)

287+5x=154+6x

After 133 minutes that each picked 952 apples



Slow Fix
$$y = 28 + 48x$$
 $y = 28 + 48x$
 $y = 28 + 48x$
 $y = 28 + 48x$
 $y = 28 + 480$
 $y = 28 + 480$
 $y = 508$

We work
 $y = 59 + 44.90x$
After 10 hours they will each Charge \$508

6) Each month the Midwest cell phone company has an operating fee of \$28.55 and charges \$0.48 per minute of calls. Each month, the Drop-Yo-Call Corporation has an operating fee of \$59 and charges \$0.19 per minute of calls. After how many minutes would the charges be the same? How much would they both charge? (Solve by graphing)

X = Per minute Y = total charge

7) Two countries are keeping track of the cost of a barrel of oil in their country. In country A, a barrel of oil costs of \$40.05 and the price increases \$0.08 each day. In country B, a barrel of oil costs \$48.74 and the price decreases \$0.03 each day. After how many days would the price be equal? What would that price be? (Solve by graphing)