

Day 3

1. let $s = \#$ of T-shirts
 $\text{Cost} = 1500 + 3s$
 $\text{Rev} = 20s$

$$1500 + 3s = 20s$$

$$1500 = 17s$$

$$s = 88.24$$

You must sell 89 t-shirts.

2. let $g = \text{cost of gallon of paint}$
 $b = \text{ " " brush}$

$$(8g + 3b = 152.5) \cdot 2$$

$$(6g + 2b = 113) \cdot 3$$

$$\begin{array}{r} 16g + 6b = 305 \\ -8g - 6b = -339 \\ \hline -2g = -34 \\ g = 17 \end{array}$$

$$\begin{array}{r} 6(17) + 2b = 113 \\ 102 + 2b = 113 \\ 2b = 11 \\ b = 5.5 \end{array}$$

Paint costs \$17/gal & brushes cost \$5.5 each

3. let $d = \#$ of dimes
 $q = \text{ " " quarters}$

$$(d + q = 20) \cdot .1$$

$$.1d + .25q = 3.05$$

$$\begin{array}{r} -.1d - .1q = -2 \\ + .1d + .25q = 3.05 \\ \hline .15q = 1.05 \\ q = 7 \end{array}$$

There are 13 dimes & 7 quarters.

$$d + 7 = 20$$

$$d = 13$$

$$.15q = 1.05$$

$$q = 7$$

4. let $C = \text{total cost}$
 $y = \#$ of yrs

$$C = 135 + 80y$$

$$C = 190 + 63y$$

Avanti is cheaper.

$$C = 135 + 80(3.24)$$

$$= \$393.82$$

$$135 + 80y = 190 + 63y$$

$$17y = 55$$

$$y = 3.24 \text{ yrs}$$

5. let $w = \#$ of 2-pt shots
 $f = \text{ " " free-throws}$
 $t = \text{ " " 3-pt shots}$

$$w + t + f = 46$$

$$2w + 3t + 1f = 81$$

$$w = 3t$$

$$\begin{array}{r} -4t - f = -46 \\ 9t + f = 81 \\ \hline 5t = 35 \\ t = 7 \end{array}$$

$$f + 4(7) = 46$$

$$f + 28 = 46$$

f = 18 free throws

$$\begin{array}{r} 3t + t + f = 46 \\ 6t + 3t + f = 81 \\ \hline \Rightarrow (4t + f = 46) - 1 \\ 9t + f = 81 \end{array}$$

6. let $m = \#$ of motorcycles
 $c = \#$ of cars

$$\begin{aligned} (m+c=200) \cdot 4 \\ 2m+4c=698 \end{aligned}$$

$$\begin{aligned} -4m-4c &= -800 \\ \underline{2m+4c} &= 698 \\ -2m &= -102 \\ m &= 51 \end{aligned}$$

There are 51 motorcycles.

7. let $w = \#$ of 2-pt ?s. $(18 = w+h) \cdot (-2)$
 $h = \#$ of 3-pt ?s $42 = 2w+3h$

$$\begin{aligned} -36 &= -2w-2h \\ \underline{42} &= \underline{2w+3h} \\ 6 &= h \\ w &= 12 \end{aligned}$$

There are 6 3-pt questions?
 12 2-pt questions.

8. let $x = \#$ of 1st #
 $y = \#$ of 2nd #

$$\begin{aligned} x+y &= 34 \\ + x-y &= 8 \\ \hline 2x &= 42 \\ x &= 21 \end{aligned}$$

$$\begin{aligned} 21-y &= 8 \\ y &= 3 \end{aligned}$$

The #s are
 21 & 3.

9. let $a = \#$ of apple pies
 $c = \#$ of cherry "

$$\begin{aligned} (36 = a+c) \cdot (-6.99) \\ 331.64 = 6.99a + 10.99c \end{aligned}$$

$$\begin{aligned} -251.64 &= -6.99a - 6.99c \\ + 331.64 &= 6.99a + 10.99c \\ \hline 80 &= 4c \\ c &= 20 \end{aligned}$$

$$\begin{aligned} 36 &= a+20 \\ a &= 16 \end{aligned}$$

16 apple pies &
 20 cherry pies
 were sold.

10. let $e = \text{calories in Egg McMuffin}$
 $h = \text{calories in hash brown.}$

$$\begin{aligned} 2e+h &= 750 \\ - (e+h) &= 450 \\ \hline e &= 300 \\ h &= 150 \end{aligned}$$

Egg McMuffins have 300 calories
 hash browns have 150 calories.