

key.

2.) Reese has \$225 in ten dollar bills and five dollar bills. The number of five dollar bills is 15 more than the number of ten dollar bills. How many of each does he have?

- (a) $t = \#$ of tens or $f = \#$ of fives.
- (b)
$$\begin{cases} t + 15 = f & \text{--- \# of bills} \\ 10t + 5f = 225 & \text{--- total cash} \end{cases}$$
- (c)
$$\begin{aligned} \text{substitution} \\ 10t + 5(t + 15) &= 225 \Rightarrow 15t + 75 = 225 \\ &\Rightarrow 15t = 150 \\ &\Rightarrow t = 10 \quad \text{AND} \quad f = 25 \end{aligned}$$
- (d) Reese has 10 \$10 bills and 25 \$5 bills.

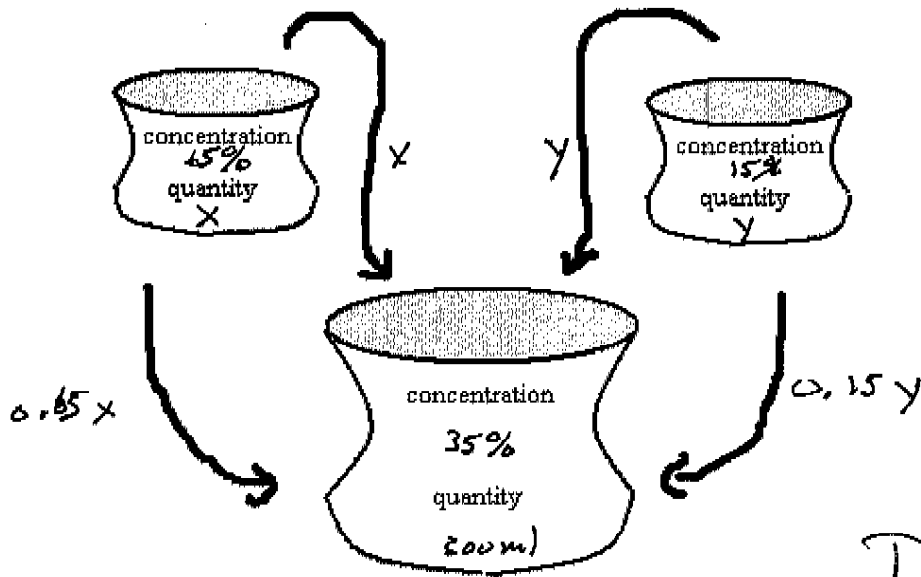
3.) Casey has 15 pounds of cashews that sell for \$5.25 per pound. If peanuts sell for \$2.50 per pound, how many pounds of peanuts should he add to the cashews to obtain a mixture that will sell for \$3.75 per pound?

- (a) $p = \#$ of lbs of peanuts. or $m = \#$ of lbs of mix.
- (b)
$$\begin{cases} m = 15 + p & \text{--- lbs of mix} \\ 3.75m = 15(5.25) + 2.50p & \text{--- price.} \end{cases}$$
- (c)
$$\begin{aligned} \text{substitution} \\ 3.75(15 + p) &= 78.75 + 2.50p \Rightarrow 56.25 + 3.75p = 78.75 + 2.50p \\ &\Rightarrow 1.25p = 22.50 \\ &\Rightarrow p = 18 \quad \text{or} \quad m = 33 \end{aligned}$$
- (d) Casey should add 18 lbs of peanuts.

4.) Two years ago, Taz was three times as old as Gel will be in one year. In four years, Taz will be fifteen times Gel's age last year. How old are Taz and Gel today?

- (a) $T = \text{Taz's age now}$ or $G = \text{Gel's age now.}$
- (b)
$$\begin{cases} T - 2 = 3(G + 1) & \text{--- 1st relationship} \\ T + 4 = 15(G - 1) & \text{--- 2nd relationship.} \end{cases}$$
- (c)
$$\begin{aligned} \text{elimination} \\ -12 = -12G + 18 &\Rightarrow 12G = 24 \Rightarrow G = 2 \\ &\text{AND } T = 11 \end{aligned}$$
- (d) Today, Taz is 11 or Gel is 2.

5.) Dory has a solution that is 65% boric acid and a solution that is 15% boric acid. How much of each should she use to obtain 300ml of a solution that is 35% boric acid?



Equation 1 (quantity): $x + y = 300$

Equation 2 (concentration): $.65x + .15y = \underbrace{300(.35)}_{105}$

Don't Forget.

Solve by substitution

$$x = 300 - y$$

$$\text{AND } .65(300 - y) + .15y = 105$$

$$\Rightarrow 195 - .5y = 105$$

$$\Rightarrow -.5y = -90$$

$$\Rightarrow y = 180$$

$$\text{AND } x = 120$$

Dory should use 120ml of 65% sol.
and 180ml of 15% sol.