

10. (10 pts) Set up the following word problem (variables, system, augmented matrix). For 10 bonus points, solve the word problem.

→ you'd have to really want it, bad, to go there!

Linda invests \$25,000 for one year. Part is invested at 5%, another part at 6%, and the rest at 8%. The total income from all 3 investments is \$1600. The combined income from the 5% and 6% investments is the same as the income from the 8% investment. Find the amount invested at each rate.

Let $x = \text{amt (in \$)}$ Linda invests $\textcircled{9}$ 5%
 $y = \dots \dots \dots \dots \dots \dots$ 6%
 $z = \dots \dots \dots \dots \dots \dots$ 8%

Then $x + y + z = 25000$ TOTAL INVEST
 $.05x + .06y + .08z = 1600$ TOTAL RETURN

→ $.05x + .06y = .08z$

The combined income from the 5% and 6% investments is the same as the income from the 8% investment.

From a 2010 TEST

6. (10 pts) Solve the following word problem. (Take it all the way to solution.)

A shopkeeper orders 42 pounds of cashews and peanuts. If he orders 12 less pounds of cashews, how many pounds of peanuts did he order?

LEXICON

Let p = the # of lbs of peanuts, c
 c = cashews.

Then $p + c = 42$ (1st sentence) of

$$c = p - 12$$

That's the setup. c by itself, already.

Use substitution:

$$c = p - 12 \Rightarrow p + c = p + p - 12 = 42$$

$$\Rightarrow 2p - 12 = 42$$

$$\Rightarrow 2p = 54$$

$$\Rightarrow \boxed{p = 27}, \text{ so}$$

$$c = 27 - 12 = \boxed{15 = c}$$

