General Algebra 2 Worksheet #8 Unit 3 selected solutions

2. Sue invested a total of \$4000, part at 6% per year and the rest at 2.5% per year. If the total interest for one year was \$177, then how much was invested at each rate?

Am't invested at 6% : x	x + y = 4000	-25x - 25y = -100,000
Am't invested at 2.5% : y	.06x + .025y = 177	60x + 25y = 177,000
		35x = 77,000
		x = 2,200
He invested \$2,200 at 6% and \$1,800 at 2.5%.		y = 1,800

4. A chemist has one solution that is 75% acid and another that is 20% acid. She needs 60cc of a solution that is 42% acid. How much of each solution should she use?

Volume of the 75% sol. : x	$\mathbf{x} + \mathbf{y} = 60$	-20x - 20y = -1200
Volume of the 20% sol. : y	.75x + .2y = 25.2	75x + 20y = 2520
		55x = 1320
She should use 24 cc of the 75% solution		$\mathbf{x} = 24$
and 36 cc of the 20% solution.		y = 36

8. Four burgers and three orders of fries cost \$6.20. Two burgers and one order of fries cost \$2.80. How much does each item cost?

Cost (¢) of 1 burger: B	$4\mathbf{B} + 3\mathbf{F} = 620$	$4\mathbf{B} + 3\mathbf{F} = 620$	$4\mathbf{B} + 3\mathbf{F} = 620$
Cost (¢) of 1 order of fries: F	2B + F = 280	-4B - 2F = -560	-6B - 3F = -840
		$\mathbf{F} = 60$	-2B = -220
A burger costs \$1.10, and an order of fries costs 60¢.			B = 110