Algebra I   Worksheet #8   Unit 9   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 $x + y = 60$ $-20x - 20y = -1200$
Volume of the 20% sol. : y $.75x + .2y = 25.2$ $75x + 20y = 2520$
                                                        $55x = 1320$
        She should use 24 cc of the 75% solution $x = 24$
        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 $4B + 3F = 620$ $4B + 3F = 620$ $4B + 3F = 620$
Cost (¢) of 1 order of fries: F $2B + F = 280$ $-4B - 2F = -560$ $-6B - 3F = -840$
                                                $F = 60$ $-2B = -220$
        A burger costs $1.10, and an order of fries costs 60¢. $B = 110$