Extra Application Problems

Translate problems 1-9 to an appropriate algebraic system of equations, and solve. Show all your work. Check your answer against the given question when you think are done

1. 261 people came to a school play. Adults paid $10 each, while kids paid only $4.50. The ticket sales brought in $2324 in total. How many adults and how many kids attended?

2. Carlos is three times as old as his son right now, but in 13 years he will only be twice his son's age. How old are they?

3. You invest a total of $19,000 in two different accounts. Last year one account earned 10% interest, while the other earned 8%, and your total interest was $1760. How much is in each account? (Assume simple not compounded interest until you get to Math12!)

4. . The cost of sending a telegram is based on a flat rate for the first ten words, and a charge per word for each additional word. If 15 words cost $11.65, and 19 words cost $14.57, find the flat rate.

5. I went to Tim's for staff coffees this morning, and came away with 34 coffees altogether. This meant the server had to pour 5 of their 96-ounce pots just for me. The 10-ounce sells for 95 cents, while the 14-ounce and the 20-ounce sell for $1.15 and $1.50 respectively. The bill came to $39.60. Is this possible? Explain.

6. I invested my 25 thousand dollars in three different accounts; one earned 10%, one earned 12%, and the best one earned 16%. My total interest was $3200, and the income from the highest rate account turned out to be the same as what I received from the other two combined. How much is invested in each?

7 Solution A is 6% alcohol; solution B is 3.5% alcohol. If you are planning to blend them what is the range of alcohol percents you could make? _____If you want a mixture that is 5% alcohol which one will you use most of? _____ If you want exactly 20 litres of 5% blend exactly what volume of each should you mix?

8. In my pocket are 42 coins worth $3.30 total. They are only nickels and dime; how many of each?

9. In my piggy bank I have quarters, nickels and dimes, worth $16.45. There are 120 coins altogether, and exactly five fewer quarters than nickels. How many of each?

10. Find the equation of the line that passes through (2, -5) and has an x-intercept of -7. Write in standard form.

…. And For fun

$$\frac{2}{3}x + \frac{1}{4}y = 18$$

$$\frac{1}{6}x - \frac{3}{8}y = -6$$