Math 9 NUMBER, COIN and AGE PROBLEMS

Do Word Problems on a separate page.

1. One number is 6 less than another. Their sum is 64. Find the numbers.

2. John is 3 years older than Mary. Five years ago he was four times as old as Mary was then. How old is John?

3. In a collection of coins there are twice as many nickels as dimes and 7 less quarters than dimes. Find the number of each coin if the collection is worth $16.25.

4. The sum of two numbers is 107. Their difference is 75. Find the two numbers.

5. Jane’s mother is 3 times as old as Jane. In 14 years, she will be twice as old as Jane is then. How old is Jane’s mother?

6. A collection of nickels and dimes amounted to $3.40. How many nickels were there if there were 50 coins in total?

7. A man has a collection of 19 coins worth $2.55. There are twice as many nickels as dimes. If the rest are quarters, how many quarters are there?

8. A boy has three more nickels than dimes. If he were to spend three of his nickels and three of his dimes, he would have spent a quarter of his money. How many nickels does he have?

9. Joe has five times as much money as Bill. However, Joe pays Bill $5 he owes him, after which Joe has just twice the amount Bill now has. How much money did each have in the beginning?

10. A piece of wiring 150 m long is cut such that each piece is twice as long as the previous piece. The shortest piece is more than 9 m long. How many pieces was this cut into? How long was each piece?

11. A student was given a scholarship of $140 in grade 10. In grade 11 they were given another scholarship worth more money and in grade 12 they were given yet another scholarship worth even more money. This student then was able to pay for 100% of their tuition at university with the scholarships received in high school. We need to find out how much this tuition was and we are given the following information:
   - The amount that was received in grade 12 was 60% of the total tuition paid for university
   - The amount received in grade 11 was 55% of that earned in grade 12

   How much was the university tuition?

12. Solving equations
   a) $3x - 7 = 14$
   b) $2(x - 1) + 5 = x + 7$
c) \[2(2x - 36 + x) = 11 - 4x\]  
d) \[8(3 + x) + 4 = 4[6(2x + 3) + 8] + 4\]

e) \[\frac{1}{3}\left(\frac{x}{5} + 5\right) - 1 = 2\left(\frac{x}{4} - 1\right) - 6\]

f) \[\frac{x}{5} - 2\left(\frac{x + 1}{5}\right) = -3x + 2(x - 3)\]

Answers:
1. 29, 35, 2. Mary = 6, John = 9, 3. 80 nickels, 40 dimes, 33 quarters, 4. 16, 91, 5. Mother = 42, 7. 7 quarters, 8. Nickels = 14, 9. Bill = $5, Joe = $25, 10. 4 pieces of 10, 20, 40, and 80m, 11. $2000 tuition, 12. (a) x = 7, b) x = 4, c) 83/10, d) –2, e) x = 20, f) x = 7