

WORD PROBLEMS:

1. Georgia has a pile of nickels and dimes worth \$3.10. How many dimes has she?
2. Anna invests \$14000 in bonds paying 7% interest and certificates paying 8.5% interest. The annual income from these investments is \$1100. How much invested at 8.5% ?
3. A collection of 56 coins is worth \$7.40. There are 12 more nickels than dimes, and the rest of the coins are quarters. How many nickels in the collection?
4. An owner of a health food store mixes two kinds of juice: apple juice selling for \$0.48/L and cranberry juice selling for \$1.20/L. How many liters of apple juice are needed to make 18L of cranapple juice selling for \$0.80/L?

5. An auto mechanic has 400L of battery acid solution that is 70% acid. She adds water to this to dilute it to a solution only 50% acid. How much water should be added.
6. How many kg of salt must be added to 24kg of a 20% salt solution in order to increase the concentration of salt to 40%?
7. How much water must be evaporated from 20L of a 40% salt solution to produce a 50% salt solution?
8. A metallurgist needs 600g of a copper-zinc alloy which is to be 68% copper. He has ALLOY A which is 60% copper and ALLOY B which is 75% copper. How much of each alloy to make his new alloy?
9. Mimi is four years older than Ronald. Five years ago she was twice as old as he was. Find their ages now.
10. A plane can fly 3750km in 3h with the wind. The plane takes 5h to travel the same distance against the wind. Find the rate of engine and rate of the wind.
11. Adults pay \$5 for play tickets and students \$3 for a ticket. In all, 90 tickets were sold for the play at a price total of \$334. How many adult tickets sold?
12. The sum of two numbers is 25 and the difference between them is 7. Find the numbers.
13. The bill for five glasses of apple juice and four salads is \$9.50 but the bill for four glasses of apple juice and five salads is \$10.30. What would be the bill for a glass of juice and a salad?
14. If you buy 6 pens and one mechanical pencil, you will get only \$1 change from your \$10 bill. But if you buy four pens and two mechanical pencils, you will get \$2 change. What is the cost of a pen and a pencil?
15. Kati invested \$5000, some at 6% and rest at 5%. The 6% income earns \$80 more interest. How much invested at each rate?
16. It takes 6h for a plane to travel 720km with a tail wind and 8h to make the return trip with a head wind. Find air speed of plane and the wind speed.
17. To use a trailer, the charge is \$30 per hour during the day and \$10.50 per hour at night. The bill came to \$411 for 28hours of use. How many hours used during day, and the night?
18. A grocer mixed nuts worth \$4 per kg with raisins worth \$3.25 per kg to make 15 kg of a mixture worth \$3.60 per kilogram. How many kg of nuts were used?
19. 8 pencils and 7 pens cost \$3.37 and 5 pencils and 11 pens cost \$3.10, how much does each pencil cost ?
20. A chemist makes 10L of a 42% sulfuric acid solution. The acid solutions mixed together are 30% and 50% sulfuric acid by volume. How much of each is needed to make the 42% solution?
21. AW charges a flat fee for a service call plus \$50/h for time worked. Sears charges the same flat fee but only \$40/h. Because both companies were needed, the work was done with AW receiving \$1700 total and Sears \$1040 with both companies working equal hours. What was the flat fee and how many hours were worked?
22. One lawn fertilizer is 24% nitrogen, and another is 12% nitrogen. How much of each fertilizer should be mixed to obtain 100 kg of fertilizer that is 21% nitrogen.