

Word Problems for Systems of Equations

Coin and Money Problems

1. Bob has 60 coins consisting of quarters and dimes. The coins combined value is \$9.45. Find out how many of each quarters and dimes Bob has.
2. Eric has 130 coins consisting of nickels and quarters. The coins combined value comes to \$15.90. Find out how many of each coin Eric has.
3. Alice is counting a cash register at the end of the night. She has \$1015 in \$5 bills and \$10 bills. If she has 138 bills all together, how many of each type does she have?

Ticket problems and similar

4. 353 people attended a local play at private club. Members get tickets for \$2,75 while non-members have to pay \$6.50. If the total value for the play came to \$1762, how many members and non-members came to play?
5. Jim runs food cart and during a busy outdoor festival he sold \$7343.75 worth of food. He sells hot dogs for \$2.95 and steak sandwiches for \$9.95. If he sold a total of 985 items that day, how many of each item did he sell?
6. 586 people attend a banquet at Disney. Residents paid \$12.95 and non-residents paid \$17.95. If Disney made \$9423.70 from ticket sales for the events, how many residents and non-residents attended?

Bank Account Problems

7. Jane invests \$9885 into two accounts. A savings account earns 6% interest, while a money market account earns 9.5% interests. After one year she made \$696.35 interest from both accounts. How much did she invest into each account?
8. Ralph invests \$15,600 into different accounts: a savings account and checking account. The savings account earns 8% interest and the checking earns 9%. After 1 year he has earned \$1,334.28 interest. How much Ralph invest into each account?
9. A group invested \$20,440 into two accounts. A secure bond account earned 2.5% interest and more risky stock earned 3.4% interest. The group earned \$623.05 for the investment in one year. How much did the group invest into each account?

Mixture Problems

10. Lou wants to make a coffee mixture to sell.
He is going to mix Sumatra coffee which costs \$2.50 per pound with Columbia coffee which costs \$3.75 per pound.
He wants to make 50 pounds of mix and he wants the cost of mix to be \$3.35 per pound.
How many pound of each will he need?
11. Jackie wants to make a mixture of nuts to sell in her store consisting of hazelnuts and cashews.
Hazelnuts cost \$6.50 per pound and cashews cost \$4.50 per pound.
If Jackie wants 60 pounds total of mixture and the cost to be \$5.10 per pound, how many of each will she need?
12. A chemist wants to make 40 liters of 22.5% acid solution.
He is going to make it by mixing a 10% acid and a 30% acid solution. |
How many liters of each will he need?
13. A chemist wants to make 75 liters of 16% acid solution. He is going to make it by mixing a 10% acid and a 25% acid solution. How many liters of each will she need?

Distance, Rate and Time Problems

14. A plane can travel 1,015 miles in 7 hours travelling against the wind. Travelling with the same wind, the plane can travel 820 miles in 4 hours. How fast can the plane travel in still air and how fast is the wind current?
15. Lance Armstrong can ride 162 miles on flat ground in 6 hours with a good breeze at his back. It takes him 10 hours to go 90 miles with the same breeze working against him. How fast is Lance going on a bike and how fast is the wind speed?
16. It takes Bob the scout 10 hours to paddle upstream (against current) a distance of 15 miles. When he turns around he finds it only takes him 5 hours to paddle 22.5 miles with the current. What is the speed of the boat in still water and what is the speed of the current of the river?
17. A boat going upstream (against the current) travels 105 miles in 15 hours. It takes the same boat 7.5 hours to make the same trip when it is travelling back downstream (with the current) . What is the speed of the boat in still water and what is the speed of the current of the river?
18. Flying from Tokyo to London is approximately 6175 miles. On the way to London from Tokyo (against the wind) the flight took 13 hours. The return flight (with the wind) took 9.88 hours. Find the speed of the plane in still air and the speed of the current.

Miscellaneous types of Problems

19. Bob ate 10 carrots and 7 Hershey's Kisses and the total calories were 263. Fred ate 4 carrots and 8 Hershey's Kisses and the total calories were 230. How many calories are in a carrot and a Hershey's Kiss?
20. During a Techno-Geek-Store sale 6 blank video tapes and 12 blank DVD's cost \$35.10. During the same sale, 8 blank video tapes and 3 blank DVD's cost \$27.95. What was the cost of the blank videotape and the cost of a blank DVD?
21. 40 adults and 26 kids went to see a movie on the open screening and the revenue for the showing was \$486.70. The next showing 20 adults and 31 kids went to see the same movie and the revenue was \$332.45 . How much was an adult ticket and how much was a kid ticket?
22. On one day Fred's Sports World sold 9 Pittsburgh Steelers jerseys and 3 Cleveland Browns jerseys for a total \$899.40. The next day they sold 12 Steelers jerseys and only 2 Browns jerseys for a total of \$1139.30. How much is the Steelers jersey and how much is the Browns jersey?

Answers:

1	23 quarters and 37 dimes	2	83 nickels and 47quarters
3	73 fives and 65 tens	4	142 members and 211 non-members
5	35 hot dogs and 634 steak sandwiches	6	219 residents and 367 non residents
7	\$2950 in 9.5% and \$6935 in 6%	8	\$6972 in 8% and \$8628 in 9%
9	\$7990 in 2.5% and \$12450 in 3.4%	10	16 lbs. of Sumatra and 34 lbs. of Columbian
11	18 lbs. Hazelnuts and 42 lbs. Cashews	12	15 liters 10% and 25 liters 30%
13	30 liters 25% and 45 liters 10%	14	plane speed = 175mph and wind speed = 30mph
15	Lance = 18 mph and wind speed= 9mph	16	Bob 3mph and current 1.5 mph
17	boat speed = 10.5 mph and water current = 3.5 mph	18	Plane speed = 550mph and wind speed = 3.5mph
19	Carrot 9.5 calories and Hershey Kiss 24 calories	20	Video \$2.95 and DVD \$1.45
21	Adult \$8.95 and kid \$4.95	22	Steelers \$89.95 and Browns \$29.95