SYSTEMS OF LINEAR EQUATIONS – WORD PROBLEMS

1. It takes Cathy 1.5 hours to paddle her canoe 6 miles upstream. Then she turns her canoe around and paddles 6 miles downstream in 1 hour. What is the rate of the current? What is Cathy's paddling rate in still water?

2. With a tailwind, a jet flew 2000 miles in 4 hours. The jet's return trip against the same wind required 5 hours. Find the jet's speed and the wind speed.

3. With a tailwind, a helicopter flies 300 miles in 1.5 hours. When the helicopter flies back against the same wind, the trip takes 3 hours. What is the helicopter's speed? What is the wind's speed?

4. Allyson paddles her canoe 9 miles upstream in 4.5 hours. The return trip downstream takes her 1.5 hours. What is the rate at which Allyson paddles in still water? What is the rate of the current?

5. With a tailwind, a plane makes a 3000-mile trip in 5 hours. On the return trip, the plane flies against the same wind and covers the 3000 miles in 6 hours. What is the speed of the wind?

****

6. A chemist mixed a 15% glucose solution with a 35% glucose solution. This mixture produced 35 liters of a 19% solution. How many liters of each solution did the chemist use in the mixture?

7. A 4% salt solution is mixed with a 15% salt solution. How many milliliters of each solution are needed to obtain 600 milliliters of a 10% salt solution?

8. A jar contains quarters and dimes. There are 15 more quarters than dimes. The total value of the coins is $23. How many of each coin are there?

9. Donnell wants to make a 2-pound mixture of cashews and pecans that costs $2.60 per pound. Cashews cost $2.50 per pound and pecans costs $3.00 per pound. How many pounds of each should he use?

10. At the Snack Shack, dried cherries cost $3.50 per pound. Dried apricots cost $1.50 per pound. The store's owner wants to make 10 pounds of a cherry-apricot mixture that costs $2.70 per pound. How many pounds of cherries and apricots should the owner use to make the mixture?

****

11. The sum of the digits of a two-digit number is 14. When the digits are reversed, the new number is 36 more than the original number. What is the original number?

12. The sum of the digits of a two-digit number is 10. If 18 is added to the number, the digits will be reversed. Find the number.

13. The sum of the digits of a two-digit number is 14. The first digit is 4 less than twice the second digit. What is the number?

14. Alex is 6 years older than Frank. The sum of their ages is 50. Find Alex's age and Frank's age.

15. Leticia is 21 years older than Katie. In 2 years, Leticia will be twice as old as Katie. Find Leticia's current age and Katie's current age.