Name ­­­ Date: \_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_

**Real World- Linear Systems.** Write an equation and show all of your work. Use separate paper if necessary. You must complete 14 problems for full credit. You must complete 2 problems from #15-18. Extra Credit may be earned

1. The sum of two numbers is 45. Their difference is 71. Find the two numbers.
2. Marcus and his friends are having a Final Four party. Marcus buys 5 burgers and 9 sodas for $28.75 at the Beefy Burger joint. When five more of his friends show up, he heads back to Beefy Burger for 10 more burgers and 10 more sodas and spends $47.50. How much is each burger and each soda?
3. Ten hotdogs and six drinks cost $37. Twenty-two hotdogs and eighteen drinks cost $85. Find the cost of each item.
4. The sum of two numbers is 32. One half the first number plus one third of the second number is 14. Find the numbers.
5. You empty your coin jar and find 49 coins (all nickels and quarters). The total value of the coins is $8.65. How many nickels and how many quarters do you have?
6. Ken is 23 years older than Tom. In 9 years, Ken will be twice as old as Tom. How old are they now?
7. Molly is 4 years younger than Heidi. In 3 years, Heidi will be twice as old as Molly. How old are they now?
8. A jar of nickels and dimes contains $5.45. There are 8 more dimes than nickels. How many of each are there?
9. A collection of nickels and dimes is worth $16.05. There are 218 coins in all. How many nickels and dimes are there?
10. Tickets to a play cost $11 for each adult and $4 for each child. If 360 tickets were sold for a total of $2826, how many tickets of each type were sold?
11. Two angles are complementary. One angle is forty-two degrees more than one half the other. Find the angles. (complimentary angles are two angles whose sum is 90 degrees)
12. Kim is comparing cell phone companies. One company charges a $25 monthly rate and 2 cents per text messaging. The other company charges a $10 monthly rate and 5 cents per text messaging. For how many messages, will the cost be the same for both phone companies?
13. An army of goblins and orcs eats breakfast before a busy day of burning and pillaging. Each orc eats 4 pieces maggot bread while each goblin eats 3 pieces of maggot bread. The army eats 265 pieces of maggot bread. Each orc has 3 weapons. Each goblin has 2 weapons. The army has 190 weapons. How many orcs and goblins are in the army?
14. Farmer Peter and Farmer Paula are picking apples from their apple trees. Farmer Peter as already picked 287 apples. Farmer Peter picks another 5 apples each minute. Farmer Paula has already picked 154 apples. Farmer Paula picks another 6 apples each minute. How long will it take the farmers to pick the same number of apples and how many apples will they have picked?
15. There are a total of 34 lions and hyenas. Each lion eats 4 antelope. Each hyena eats 3 antelope. 117 antelope are eaten. How many lions and how many hyenas?

1. Two companies sell stock shares on Wall Street. Losers Incorporated stock starts with a value of 39.63 and loses $0.08 for each new stockholder. The “Be Rich with Us” Corporation starts with a value of $24.45 and gains $0.03 in value for each new stockholder. At how many stockholders will the value be the same. What is the value?
2. Last weekend, the Knights of the Round Table held a Jousting contest. During the contest, each knight had 3 spears, and each squire had 2 spears, for a total of 32 spears. Also, each knight had 2 swords, and each squire had only 1 sword, for a total of 19 swords. How many knights and how many squires in all?
3. Ted and Ara are saving money. Ara has saved $1,477 and saves 64 more dollars each payday. Ted has saved $948 and saves 87 more dollars each pay day. How many paydays before they have each saved the same amount? How much will they have saved?
4. At a recreation and sports facility, 3 members and 3 nonmembers pay a total of $180 to take an aerobics class. A group of 5 members and 3 nonmembers pay $210 to take the same class. How much does it cost members and nonmembers to take an aerobics class?
5. One car model costs $12,000 and costs an average of $0.10 per mile to maintain. Another car model costs $14,000 and costs an average of $0.08 per mile to maintain. If one of each model is driven the same number of miles, after how many miles would the total cost be the same?
6. The larger of two numbers is 5 more than twice the smaller. If the smaller is subtracted from the larger, the result is 12. Find the numbers.