First name: _____ Last name: _____ **Student ID: _____**

Ratio, Proportion and Percent Homework

Basic Problem

1. A set of golf clubs is marked for sale at $180, a reduction of 25%. What was the original price in dollars of the golf clubs?

2. Your favorite store has the clearance merchandise marked 40% off. If you make your purchase before 10AM, you get an extra 30% off of the discounted price. If the original price of an item was $50, how much will you pay if you receive both discounts?

3. On Tiffany and Mayla's softball team, the ratio of the number of games won to the number of games lost is 37/11. To the nearest whole percent, what percent of its games did their team lose?

4. Austin and Aaron were running for mayor in a small town. Aaron received fifty-four percent of the votes. Austin received three thousand, two hundred sixty-six votes. How many votes were cast in the town, assuming that everybody in the town voted for either Austin or Aaron?

5. The ratio of the ones digit of a two-digit number to the tens digit is one-third. The ones digit is four less than the tens digit. What is the number?

6. Olivia left at 1:54 to visit her grandma's house. She arrived at 4:57 after driving fifty mph. On the way home, Olivia drove fifty-three mph. How long will it take Olivia to drive home?

Challenge Problem

1. If $\frac{x-y}{x+y}=\frac{5}{2}$, then what is the value of $\frac{x}{y}$?

2. A wooden rectangular prism has dimensions 4 by 5 by 6. This solid is painted green and then cut into 1 by 1 by 1 cubes. What is the ratio of the number of cubes with exactly two green faces to the number of cubes with three green faces?

3. If *a* is 50% larger than *c* and *b* is 25% larger than *c*, then *a* is what percent larger than *b*?

4. A boat crew that can row at a rate of 8 miles per hour in still water has found that it takes 1.5 times as long to row any specified distance upstream as it takes to row the same distance downstream. What is the rate of the current in miles per hour?

5. The solution in a 7-liter radiator system is 35% antifreeze. How much of the solution must be drained and replaced by a 95% antifreeze solution to obtain a 50% antifreeze solution?

6. A chemist has four liters of 10% alcohol solution. She wants to add enough of a 50% alcohol solution to get a 30% alcohol solution. After adding the 50% solution, she discovers the container was mislabeled and she had actually added water. How much pure alcohol must she now add to get a 30% solution?

7. My grade in a certain math class is determined by three tests. My highest test score will count for 50% of my grade and my lowest for 20%; the "middle" test score will count for 30%. I must have a weighted average of 60 in order to pass the class. If I have already earned scores of 70 on my first two tests, what is the lowest score I can earn on the third test for which I will still pass the class?

8. Julia bought two used cars and fixed them up. She sold the first one for a 40% profit and the second for a 50% profit. She made a total profit of $5,830 by selling these cars. The price that Julia paid for the first car was $3,200 less than the price for the second car. What was the selling price of each car?

9. Some money will be divided in the ratio of 3 to 5. Four times the smaller amount is three hundred ninety-three dollars less than three times the larger amount. How will the money be divided?

10. Aaron has two types of iodine in his lab. He has brand 213 iodine, which costs thirty-six cents per ounce. He also has brand 856 iodine, which costs $1.58 an ounce. How many ounces of brand 213 should he use if he has 63 ounces of brand 856 and wants to make a mixture that costs approximately $0.53 per ounce?

11. Anna left early in the morning for a long bike ride. She reached the half point of her ride about two hundred thirty-two minutes later. She calculated her speed was seven mph for the first half of the trip. If she rides the second half at a rate that is eight mph more, how much quicker will the second half be (in minutes)?

12. Mary has d liters of punch that is d% grape juice. How many liters of grape juice must she add to make the punch 3d% grape juice?