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

Word Problem 1 Homework

Basic problems:

1. Find the probability. Show work!

1. A deck of cards has 3 pink, 4 gray, 6 black, and 3 violet cards. You pick 2 cards from the deck. Cards are <u>not</u> returned to the deck after they are picked. P(the first card is not gray and the second card is violet)	2. There are 6 violet, 6 gray, and 3 white marbles in a hat. You pick 3 marbles from the hat. Marbles are <u>not</u> returned after they have been drawn. P(the first marble is not white, the second marble is gray, and the third marble is gray)

2. Solve the following problems with algebra.

1. The sum of two consecutive even integers is 118. What is the first number?	2. The sum of three consecutive integers is 207. What is the second number?
3. The sum of four consecutive even integers is 196. What is the third number?	4. What is the sum of three consecutive odd integers if the sum of the first and third numbers is two times the second number?

Challenge problems

1. During a mathematics test, 18 students answered question 1 correctly, 23 students answered question 2 correctly, 8 students got them both correct and 11 students answered incorrectly on both questions. How many students took the test?

2. Sylvie and Mary have a bag of marbles. When they split these marbles into two equal piles, one marble remains. When they split these marbles into three equal piles, once again one marble remains. Among the following numbers, which one cannot represent the number of marbles that Sylvie and Mary have?

(A) 7 (B) 13 (C) 25 (D) 31 (E) 41

3. Ahcène, Nabil and Paul play each other in a tournament. Each game has a winner and a loser. The winner of the tournament is the first to win 10 games and the tournament ends when a winner is found. They play each other in the order: Ahcène vs. Nabil, Ahcène vs. Paul, and Nabil vs. Paul, repeating this order until the tournament ends. What is the smallest possible number of games in the tournament?

4. Each hour, a wood-harvesting machine cuts the same number of logs and places them on a pile. At 8 am, there are 13 logs on the pile. At 11 am, the pile has grown to 46 logs. How many logs will the pile contain at 6 pm?

5. On the planet Pluto, plouks have 2 heads and 3 legs and zuves have 1 head and 4 legs. A tall plutonian observes 10 heads by looking over a fence. A small plutonian looking under the same fence observes 25 legs. How many plouks there are behind this fence?

6. A box contains some apples. Andrée takes 1/2 of them along with one extra apple. Beatrice takes 1/3 of the remaining apples along but puts two apples back into the box and finally Corrine takes 5/6 of the remaining apples along with one more apple. There are now 7 apples left in the box. How many apples were in the box before Andrée took her share?

7. In a basketball game, a team can score either 1, 2 or 3 points by throwing the ball through a hoop. Our team throws the ball through the hoop 50 times and scores 80 points. What is the largest possible number of 3-point throws our team made?

8. A basket contains some apples. Alice takes 1/2 of the apples and then places 15 of the apples back in the basket. Barry then takes 1/2 of the remaining apples and places 10 back in the basket. They find that each of them has the same number of apples. How many apples are left in the basket?

9. A jar contains some marbles. 3/5 of the marbles are red and 2/5 are green. 14 red marbles are removed and replaced by the same number of green marbles. The proportion of red marbles is now 1/2. How many red marbles were in the jar originally?

10. In a school, all of the students study physics or chemistry. Sixty percent of the students who study physics also study chemistry, but only one third of the chemistry students study physics. If there are 110 students in this school, how many of them study both of these subjects?

11. A jar contained 30 pieces of candy. Fourteen children each took some candy from the jar. Each child took either 1, 2 or 3 pieces of candy. If all of the candy was taken, what is the maximum number of children who each took three pieces?

12. Bernard has twice as many marbles as Bob. Donald has as many marbles as Bernard and Bob have together. Roman has 10 marbles more than Donald. Together they have 109 marbles. How many marbles does Bernard have?