33. Paul Johnson spent 7 weeks at a summer camp. He noted that the number of cloudy days was 11 more than the number of rainy days and the number of bright, clear days was 14 more than the number of rainy days. Find the number of rainy days.

34. In a class of 42 pupils, the number of boys is 12 fewer than twice the number of girls. Find the number of girls in the class.

35. At a school piano recital the number of outside guests was 18 more than $\frac{1}{3}$ the entire audience. If there were 84 guests, how large was the audience?

36. Stephan Elliott's wages were increased $6.25 each day. If he earned $81.75 in three days, how much did he earn the first day?

37. Noel doubled the number of magazine subscriptions he sold each week for four weeks. If he sold 32 subscriptions during the fourth week, how many did he sell the first week?

38. Angie Goddard's earnings from baby-sitting doubled each week for four weeks. If she earned $90 in all during the four weeks, how much did she earn the first week?

39. Twice a certain number increased by 9 gives 35. Find the number.

Test A—Progress Test

I. 1. If y is one part of 51, represent the other part.

2. If n is an odd number, represent the next odd number after n; the even number just preceding n.

3. Jackson is y years old and his father is 3 times as old. Represent the age of the father now; Jackson's age 6 years ago; the father's age 5 years from now; the sum of their ages 8 years from now.

4. The difference between two numbers is 26. If s represents the smaller number, what will represent the greater? If g represents the greater number, what will represent the smaller?

II. Solve the following equations and check the results.

1. $3x = 15$ **2.** $\frac{1}{2}x = 30$ **3.** $\frac{2}{3}x = 12$

4. $6 + y = 19$ **5.** $z - 7 = 12$ **6.** $6a + 2 = 20$

7. $3y - 5 = 7$ **8.** $11x - 8x - 8 = 10$

III. Write the necessary preliminary steps and the equations for solving the following problems; but do not solve the equations.

1. A room 38 feet long is divided into two rooms by a partition running across it. If one of the new rooms is 6 feet longer than the other, how long is each of the new rooms?

2. After the price of a CD player had been reduced by $\frac{1}{4}$ of its original price, it was sold for $48. What was the original price?

3. Carol sold $\frac{1}{4}$ as many magazines as Tom. If together they sold 35 magazines, how many did each sell?

4. The perimeter of a triangle is 27 inches. The second side is 3 inches longer than the first side and the third side is twice as long as the first side. How long is each side?

Test B—Improvement Test

I. 1. A piece of ribbon 30 inches long is cut into two parts. If one of the pieces is x inches long, represent the number of inches in the other piece.

2. If e is an even number, represent the even number just preceding e; the odd number just after e.

3. One number exceeds another by 14. If g represents the greater number, what represents the smaller? If s represents the smaller number, what represents the greater?

4. Marissa is m years old and her cousin is twice as old. Represent the cousin's age now; Marissa's age 7 years ago; the cousin's age 11 years from now; the sum of their ages 5 years from now.

II. Solve the following equations and check your results.

1. $5x = 30$
2. $\frac{1}{3}x = 8$
3. $\frac{3}{4}y = 12$
4. $a + 11 = 17$
5. $b - 8 = 4$
6. $8z + 5 = 29$
7. $5x - 2 = 8$
8. $9x - 5x - 11 = 17$

III. Write the necessary preliminary steps and the equations for solving the following problems; but do not solve the equations.

1. Tonita baked a total of 112 oatmeal and peanut butter cookies. She baked 18 fewer oatmeal cookies than peanut butter cookies. How many oatmeal cookies did she bake?

2. Two boys together earn $75 during the vacation. If the older earns 3 times as much as the younger, how many dollars does each earn?

3. Greg Porter is $\frac{1}{6}$ as old as his father. The sum of their ages is 42 years. How old is each?

4. The length of a rectangle is 4 times its width. If the perimeter is 65 inches, find the length and the width.

Test C—Test for High Rank

Do the following problems by forming the equations and solving them.

1. Ninety-six persons rode in buses to an elementary school picnic. There were 5 times as many parents as bus drivers; the number of boys was 3 times the number of parents; and there were 12 fewer girls than boys. How many bus drivers were there?

2. Charity has 3 times as long a walk to school as Michele has and the difference between the distances they walk is $\frac{1}{2}$ mile. How far does each walk?

3. David earned \$3 less than twice the number of dollars that Sam earned. If together they earned \$51, how was the money divided?

4. In a class of 42 pupils, 7 more pupils received B than A on a test and the number who had C was 3 times the number who had A. If in addition there was 1 less D than A, find the number of pupils receiving each mark.

5. In the twelve weeks of summer vacation the number of clear days was 8 more than 3 times the number of rainy days. How many rainy days were there?

6. There are 28 books on the shelf of a bookcase, of which 5 are poetry. Of the others the number of novels is 8 more than twice the number of essays. Find the number of essays.

7. A bank teller gave a customer \$300. She gave twice as many fives as tens, and half as many twenties as tens. How many of each bill did she give the customer?

8. On a trip of 80 miles, a man traveled 12 times as far by train as by boat and 4 miles less by bus than by boat. Find the number of miles traveled in each part of the journey.

   Hint. Let x = the number of miles traveled by boat.

Test A—Progress Test

I. Write:

1. The product of $3p$ and q.
2. The difference between x times y and the square of m.
3. The product of $x - y$ and $3y + 4$.
4. Three times x divided by the square of y.
5. The sum of a and twice b.

II. Write in abbreviated form.

1. $5xxx$
2. $mmmmss$
3. $6aabbb$

III. Write:

1. A monomial.
2. A trinomial.
3. A binomial.
4. Two terms each similar to 5m.

IV. Find the value of each of the following when $x = 3$, $y = 2$, $m = 4$, $n = 1$, and $a = 0$.

1. $3xy - 2mn$
2. $\frac{m^2}{4y} + \frac{ax}{7m}$
3. xy^3
4. $x^3 + y^2$
5. $m + xy - m \div y$
6. $(y + m)^2$
7. $(m - n)(x + y)$

V. Collect similar terms.

1. $5a^2 + a + 4 + 3a - 2a^2 - 3 - 2a$
2. $11x + 7y + 4z - 5y + 8z - 5x - 4z + 2y$
3. $8ab + 7 + 5ab - 4 + 6 - 7ab$
4. $9m + 15n - 8m - 10n - m - 5n$

Test B—Improvement Test

I. Write:

1. The sum of the cube of b and the square of c.
2. The product of $5a$ and $2c$.