MATH 5: HANDOUT 1
Review and Warm-Up Problems

Review Topics

- Division with remainder. Divisibility tests by 2, 3, 4, 5, 6, 9. Divisors (factors), multiples.
- LCM, GCD. Finding by listing of all divisors.
- Prime and composite numbers. Prime factorization.
- Finding GCD and LCM using prime factorization.
- Operations with fractions.
- Basic work problems.

Homework

1. Find the following sums:
$$1 + 2 + 3 + \cdots + 60, \qquad 2 + 4 + 6 + \cdots + 60.$$

2. Is the number 24680 divisible by 2? by 3? by 4? by 6? by 9?

3. If it is 3pm now, what time of the day will it be in 45 hours? in 200 hours?

4. A box of markers has 18 markers. A box of pencils has 24 pencils. What is the smallest number of boxes of each you must buy to have exactly the same number of markers and pencils?

5. Find the prime factorization of 360.

6. Find LCM and GCD of 84 and 210.

7. Consider the product of numbers from 1 to 30:
$$1 \times 2 \times 3 \times \cdots \times 30.$$

   How many 5s are in the prime factorization?

8. Compute:
$$\frac{17}{8} + \frac{9}{10}, \qquad \frac{11}{12} - \frac{5}{18}.$$

9. Compare $\dfrac{13}{7}$ and $\dfrac{17}{9}$.

10. Compute:
$$\frac{4}{15} \times \frac{25}{6}, \qquad \frac{18}{49} \times \frac{21}{24}.$$

11. Compute:
$$\frac{5}{12} \div \frac{15}{16}, \qquad \frac{27}{40} \div \frac{18}{25}.$$

12. A bakery made 240 muffins. Customers bought $\frac{5}{8}$ of them. The staff ate 30 muffins. How many muffins were left?

13. A book has 5 chapters. The first chapter is 15 pages long, which is $\frac{3}{5}$ of the second chapter. The third chapter is $\frac{4}{5}$ of the first two chapters together. The fourth chapter is the same length as the first. If the entire book is 120 pages, how many pages is the fifth chapter?