Math 5a, homework 3.

1. What is the last digit of number: 2024^{23}, 2023^{23}?

2. Even or odd number will be the sum
$$1 + 2 + 3 + \ldots + 1990$$
3. Simplify the following fractions:

$$\frac{5^3 \cdot 7^7}{5^2 7^6} \qquad \frac{(8 \cdot 9)^5 \cdot 7^{10}}{8^2 \cdot 9^3 \cdot 7^7}$$

4. Peter asked his father, how old is he. "If you add four years to the half of my age, you will know how old I was 14 years ago" answered the father. How old Peter's father is?

5. Evaluate:

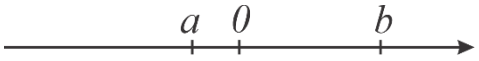
$$\frac{(2.3 + 5.8) \cdot 3\frac{5}{7}}{(4.9 - 2.3) : \frac{7}{9}} \quad (answer\ is\ 9);$$

6. Solve the following equations:
$a.\quad 2^x \cdot 2^{2x} = 64; \qquad b.\quad 3^n \cdot 9 = 81; \qquad c.\quad 5^p = 1$

7. Anna drove her car 345 miles and used 15 gallons of gasoline. At the same rate, how many miles could she drive her car using 35 gallons of gasoline? Set up and solve a proportion.

8. Points a and b are marked on a coordinate line. Compare:

$a.\ a + b \ \ldots\ 0; \qquad b.\ a - b \ \ldots\ 0; \qquad c.\ ab \ \ldots\ 0; \qquad d.\ \frac{b}{a} \ \ldots.\ 1$



9. A teacher gave a very difficult problem for the test. Having checked all works, he discovered that the number of girls who solved the problem is equal to the number of boys who didn't. What is greater, the number of students who solved the problem or the number of boys?