HW#2 is Due October 7; submit to Google classroom 15 minutes before the class time.

Review from Math 5

1. A hot water faucet fills a bucket in 40 minutes, and the cold water faucet fills the same bucket in 1 hour. How fast will these two faucets fill the bucket if they are turned on together?

2. Rahul's father is 3 times older than Rahul. Six years ago, his father was 5 times older. How old was Rahul's father when Rahul was born?

3. Simplify the following expressions (open the brackets and collect similar terms):
   a) $2(z + 4) - (y - 1) =$
   b) $5(3 - 4x) + 2(x - 10) =$
   c) $a(b + c) + b(a + c) =$
   d) $(x - 5)(2x + 1) =$
   e) $(x + 7)(x^2 - 2x) =$

4. Solve the following expressions:
   a) $2^{-2} \cdot (2^2 + 4^2) =$
   b) $6^3 \cdot (2^{-3} + 3^{-3}) =$

5. Let $a = 2 \cdot 7^6, b = 7^2 \cdot 2^3$. Compute $a^2 \cdot b, \quad \frac{a}{b}, \quad \sqrt{6 \cdot \frac{a}{b}}$

6. We roll two dice. What is the probability that the product is even? What is the probability that the product is odd? Which event is more likely?

7. How many ways are there to choose a president, a vice president, and a treasurer in a group of 10 people?

8. In a right triangle, one leg has length 5cm and the hypotenuse is twice as long as the other leg. What is the length of the hypotenuse?