Math 5b, homework 26.

1. Two square carpets were brought into a large square hall, with one carpet's side being twice as long as the other. When the carpets were placed in opposite corners of the hall, they covered 4 square meters in two layers, and when they were placed in adjacent corners, they covered 14 square meters. What are the dimensions of the hall?

2. How many two-digit numbers are there where the tens digit is greater than the units digit?

3. Three salt solutions with identical weights were mixed together. The concentration of salt in the first solution is 18% (meaning 18% of the total weight is the weight of salt), and the concentration in the second solution is 7%. What is the concentration of the third solution if the concentration of the mixture is 10%?

4. Represent the following expressins as fractions ($a, b, c, d, k \neq 0$):
   Example:
   $$\frac{3}{4b} - \frac{5}{b^2} = \frac{3 \cdot b}{4 \cdot b \cdot b} - \frac{5 \cdot 4}{b^2 \cdot 4} = \frac{3b}{4b^2} - \frac{20}{4b^2} = \frac{3b - 20}{4b^2}$$

   $a. \ \dfrac{7}{2a} + \dfrac{4}{a^2};$ $b. \ 1 - \dfrac{5}{b};$ $c. \ 3d : \dfrac{d^3}{4c};$ $d. \ \dfrac{n}{5k^2} \cdot 10k;$