

Math 5b, homework 25.



1. 6 points are marked on the plane so that no three of them lie on the same (straight) line. How many segments are there with ends at these points? If there are 50 points? 100 points?
2. 6 points are marked on the plane so that no three of them lie on the same (straight) line. How many triangles are there with vertices at these points? If there are 50 points? 100 points?
3. There are 3 starters, 4 entrees, and 4 desserts in the price fix dinner. How many different ways are there to fix your diner?
4. How many different five-digit numbers, not containing identical digits, can be written using the digits 1, 2, 3, 4, 5?
5. How many different five-digit numbers, not containing identical digits, can be written using the digits 1, 2, 3, 4, 5, such that:
 - a. The last digit is 3?
 - b. The first digit is 2, and the last digit is 4?
6. Three salt solutions with concentrations of 10%, 15%, and 30% are mixed. The mass of the first solution is 180 g. The mass of the second solution is twice the mass of the first, and the mass of the third solution is 100 g greater than the mass of the second. What is the concentration of the resulting mixture?
7. Evaluate (answer is 15):

$$\left(4\frac{1}{12} - \frac{1}{3}\right) : 0.15 - \frac{(14 - 0.14) : 0.014}{99}$$

8. A cyclist left village **A** for village **B** at a speed of **16 km/h**. Two hours later, a pedestrian left village **B** for village **A**, traveling at a speed that is **35%** of the cyclist's speed. One and a half hours after the pedestrian started walking, the distance between the pedestrian and the cyclist was **10.8 km**. What is the total distance between village **A** and village **B**?