\_ \_ Unit 8 Day 3 Assignment

**Guided Practice**

**Compute the following**

1) $=\frac{11!}{\left(11-3\right)!}=$ 2) $=\frac{11!}{\left(11-3\right)!3!}=$

3) There are 23 students in a high school geometry class. The students are tasked to form a group of 5 representatives. How many different groups can be formed?

4) Lufkin's junior varsity basketball team has 12 athletes on their team. If the coach chooses at random 5 players to start the game, then how many different starting line-ups are possible?

5) If 3 points are randomly chosen from those on the pentagon shown,
what is the probability that they all lie on the same line?

6) The Texas Two Step lottery has two steps in choosing numbers. Step one: choose 4 numbers, without repeating numbers, from 1 to 35. The order in which the numbers are chosen does not matter. Step two: choose 1 bonus ball that can be any number from 1 to 35. What is the probability that the winning Jackpot numbers are 34 - 15 - 2 - 3 and 17 for the bonus ball?

7) How many lines are determined by 10 randomly selected points, where no three of which are collinear?

**Practice Problems**

10) $=\frac{9!}{\left(9-4\right)!4!}=$ 11) $\frac{10!}{(10-5)!}=$

12) There are 15 students in a high school geometry class. The students are tasked to form a group of 5 representatives. How many different groups can be formed?

13) The high school junior varsity soccer team has 25 athletes on the roster. If the coach chooses at random 11 players to start the game, then how many different starting line-ups are possible?

14) If 3 points are randomly chosen from those named on the triangle and its centroid shown, what is the probability that they all lie on the same line?

 

15) How many lines are determined by 13 randomly selected points, where no three
of which are collinear?

16) Two police cars observe you and 5 other drivers drag racing on Timberland drive. The police can only pull over 2 of the total 6 cars leaving the other 4 to get away! How many different combinations of two cars can be ticketed?

**Review**

**Use the information below to answer problems 17-19**

**A bag contains 14 chips of which 6 are red, 4 are white, and 4 are blue.**

17) How many unique **permutations** (ordered arrangements) are possible using all 14 chips?

18) What is the probability of drawing a white chip out of the bag?

19) What is the probability of drawing a red or white chip out of the bag?