\_ \_ Unit 8 Day 2 Assignment

**Guided Practice**

**Compute the following**

1) $6!=$ 2) $\frac{7!}{3!}=$ 3) $=\frac{8!}{\left(8-3\right)!}=$

4) How many 5-digit ID numbers are possible if all 10 digits may be used and digits may be repeated?

5) How many 5-digit ID numbers are possible if all 10 digits may be used and digits **cannot** be repeated?

6) How many 5-digit ID numbers are possible if an ID must start with a non-zero digit and digits may be repeated?

7) Max forgot to study for a 10 question **true/false** quiz on Friday. Max wants to determine the probability of making a perfect score if he randomly guesses true or false on each question. How many different ways can he answer the quiz and what is the probability he makes a perfect score?

8) Which state name has the most rearrangements of the letters in its name, **FLORIDA** or **TENNESSEE**?

9) A bag contains 9 chips of which 4 are red,
3 are blue, and 2 are white.
How many unique **permutations** (ordered arrangements) are possible using all 9 chips?

**Practice Problems**

10) $5!=$ 11) $=\frac{10!}{(10-5)!}$ = 12) $=\frac{9!}{(9-4)!}=$

13) How many 4-digit ID numbers are possible if all 10 digits may be used and digits can be repeated?

14) How many 7-digit ID numbers are possible if all 10 digits can be used and digits **cannot** be repeated?

15) How many 5-digit ID numbers are possible if an ID must start with a non-zero digit and digits **cannot** be repeated?

16) How many 4 letter orderings are possible if we select, without replacement, from the 26 letter alphabet?

**Use the information below to answer problems 17 and 18**

Sarah takes a 20 question multiple choice exam. Each question has four possible answer choices: a, b, c, or d.

17) How many ways can the 20 question exam be answered?

18) What is the probability she makes a perfect score?

**Use the information below to answer problems 19-21**

**A bag contains 12 chips of which 5 are purple, 4 are yellow, and 3 are black.**

19) How many unique **permutations** (ordered arrangements) are possible using all 12 chips?

20) What is the probability of drawing a yellow chip out of the bag?

21) What is the probability of drawing a purple or black chip out of the bag?