

M408

Name _____

Probability

Worksheet 1

- 1.) If 10 students sit in the same row in an auditorium, how many possible ways can they be arranged?
- 2.) How many batting orders of 9 people can be made from a baseball team with 20 members?
- 3.) How many zip codes are possible if the numbers 0 through 9 are used for each of the five digits?
- 4.) Suppose that when the first digit is 0, the second, third, and fourth digits cannot be 0. How many 5-digit zip codes are possible if the first digit is 0?
- 5.) The theater has 4 movies and 8 types of candy. You have 5 dates you could invite. How many different ways could you pick one movie, one type of candy, and one date?
- 6.) How many 4-digit even numbers could be formed from the digits $\{0,1,2,3,4\}$ with no repetition?
- 7.) How many license plates are possible if you want 3 letters followed by 4 digits?
- 8.) How many plates are possible if you want 3 letters followed by 4 digits, with no repeats?
- 9.) You want a plate with 5 letters. The first shall be a vowel, and the rest are consonants. No repeat letters.
- 10.) You want a plate with 5 numerical digits. There must be a 1 followed by a 2 somewhere in the plate, but the rest of the numbers can be any digit. No repeats.

Evaluate or Simplify.

11.) $7!$

12.) $0!$

13.) $\frac{17!}{14!}$

14.) $\frac{12!}{4!6!}$

15.) $\frac{(n+2)!}{n!}$

16.) $\frac{(2n+1)!}{(2n)!}$

17.) $5!+6!-7!$

18.) $\frac{6!}{9!-6!}$

19.) $\frac{3^{n+1} \cdot n!}{3^n \cdot (n+1)!}$

20.) $\frac{5^{n+2} \cdot (n+1)! \cdot x^{n+3}}{5^{n+6} \cdot (n+3)! \cdot x^{n+4}}$