Ch.14 Probability/Statistics Practice **Name:** **Per:**

WARM UP:

A. Complete the chart to show all possible outcomes for finding the sum of 2 dice.

	1	2	3	4	5	6
1						
2						
3						
4						
5						
6						

B. Two number cubes are tossed. What is the probability that the sum of the numbers shown is less than 5?

C. Two number cubes are tossed. What is the probability that the sum of the numbers shown is less than 5 ***given*** that exactly one cube shows a one?

P(sum<5 | one 1) =

D. Two number cubes are tossed. What is the probability that exactly one cube shows a one ***given*** that the sum of the numbers shown is less than 5?

P(|) =

For #1-5: Two standard number cubes (dice) are tossed. Refer to above chart (sample space) to solve.

1. What is the probability of getting a sum of 6?
2. What is the probability of getting a sum less than 6?
3. What is the probability of getting a sum less than 6 ***or*** an even sum? *(hint: not mutually exclusive, show work!)*
4. What is the probability of getting an even sum ***given*** that the sum is less than 6? P(|) =
5. What is the probability of getting a sum less than 6 ***given*** that the sum is even? P(|) =

Conditional Probability *(use proper notation similar to #4-5, refer to appropriate sample space)*

6. Fourteen slips of paper are numbered with the integers 1 through 14. What is the probability of choosing one slip of paper with an integer that is divisible by 3 ***given*** that it is less than 10?
7. A card is drawn from a deck. What is the probability it is a King ***given*** that it is a face card?
8. Two number cubes are tossed, find the probability that the numbers showing on the cubes match (doubles) ***given*** that their sum is greater than 7.

CHECK ANSWERS:

480 1260

40,320 151,200

$\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{6}$ $\frac{1}{11}$ $\frac{1}{12}$

$\frac{2}{3}$ $\frac{2}{3}$ $\frac{2}{5}$ $\frac{2}{5}$ $\frac{2}{9}$

$\frac{5}{18}$ $\frac{5}{36}$ $\frac{5}{432}$

It is OK to use your calculator but be sure to show how you set up each of the following problems. Use proper notation and no decimals!

9. A toolbox contains 12 wrenches, 8 screwdrivers, and 5 pliers. ***How many ways*** can each mechanic choose 3 tools, if he needs one of each?
10. ***How many ways*** can a mother, father, and six children be arranged in a row for a photograph?
11. ***How many ways*** can the letters in the word *bookkeeper* be arranged?
12. ***How many ways*** can 3 blue, 4 red, and 2 yellow notebooks be arranged in a row?
13. Find the ***probability*** of getting a sum of 8 on the first throw of two number cubes *and* a sum of 4 on the second throw.
14. From a box containing 12 slips of paper numbered 1 to 12, two slips are drawn without replacement. Find the ***probability*** that the numbers on both slips are divisible by 3.
15. Two number cubes, one red and one blue, are tossed. What is the ***probability*** that the red number cube shows a 5 **and** the blue number cube shows an even number?