Honors Statistics: 3.7 Worksheet #1

I. Fundamental Counting Principle

1. How many even 2 digit positive integers less than 50 are there?
2. How many odd 2 digit integers greater than 20 are there?
3. A student council has 5 seniors, 4 juniors, 3 sophomores, and 2 freshmen as members. In how many ways can a 4- member council committee be formed that includes one member of each class?
4. In how many different ways can a 10 question true-false test be answered if every question must be answered?
5. How many 7 digit telephone numbers can be created if the first digit must be 8, the second must be a 5, and the third must be 2 or 3?
6. How many license places of 3 symbols (letters and digits) can be made using at least 2 letters for each
7. How many ways are there to write a 3-digit positive integer using the digits 1, 3, 5, 7, and 9 if no digit is used more than once?
8. In how many ways can a 10 question true-false test be answered if it is all right to leave questions unanswered?
9. How many ways are there to select 3 cards, one after the other, from a deck of 52 cards if the cards are not returned to the deck after being selected?
10. How many odd 3 digit positive integers can be written using the digits 2, 3, 4, 5, and 6?

II. Combinations

11. How many combinations can be formed from the letters in EIGHT if you choose 3 letters?
12. A volleyball team has 12 members, one coach, and 2 managers. How many different combinations of 7 people can be chosen to kneel in the front row of the team picture?
13. A sample of 4 mousetraps taken from a batch of 100 mousetraps is to be inspected. How many different samples could be selected?
14. In a group of 10 people each person shakes hands with everyone else once. How many handshakes are there?
15. You can order a hamburger with cheese, onion, pickle, relish, mustard, lettuce, tomato, or mayonnaise. How many different combinations of the 'extras' can you order, choosing four of them?

III. Permutations

16. In how many ways can 6 different books be arranged on a shelf?
17. In how many ways can 8 people be lined up in a row for a photograph?
18. In how many ways can 4 of 7 different kinds of bushes be planted along one side of a house?
19. In how many ways can the letters of the word TODAY be arranged using only 3 letters at a time?

Find the number of ways of the letters of each word can be arranged.
20. ADDEND
21. BEEKEEPER
22. MISSISSIPPI
23. CLASSROOMS
24. STATISTICS
25. FLORIDA

1	20
2	40
3	120
4	1024
5	20000
6	73008
7	60
8	59049
9	132600
10	50
11	10
12	6435
13	3921225
14	45
15	70
16	720
17	40320
18	840
19	60
20	120
21	3024
22	34650
23	302400
24	50400

25   5040