

Determine the value:

- 1) How many numbers of 3 different digits can be formed from the digits 1, 2, 3, 4, 5, 6, 7, 8, 9?
- 2) How many numbers of at most 3 different digits each can be formed from the digits 1, 2, 3, 4, 5, 6, 7, 8, 9?
- 3) In how many ways can 4 boys and 3 girls be seated in a row containing seven seats
 - a) If they sit anywhere.
 - b) If the girls and boys must alternate.
- 4) A baseball manager insists on having his best hitter bat fourth and the pitcher bat last. How many batting orders are possible?
- 5) A language teacher wants to keep books of the same language together on his shelf. If he has 12 spaces for 5 French, 4 Italian, and 3 German books, in how many ways can they be placed on his shelf?
- 6) In how many ways can 8 people be seated around a table if 2 people insist of sitting next to each other?
- 7) How many license plates can be made using any two letters for the first 2 places and any of the numbers 0 through 9 for the last 3 given that no letter or number is repeated?
- 8) How many permutations are there of the letters of the word "Tennessee"?
- 9) In how many ways can 7 different colored beads be made into a bracelet?
- 10) Solve: $P(n, 5) = 20P(n, 3)$ for n .

Answer Key

1) 504

2) 585

3)

a) 5040

b) 144

4) 5040

5) 103 680

6) 1 440

7) 468 000

8) 3 780

9) 360

10) $n = 8$