NAME _____ DATE _____ PERIOD _____

Practice

Permutations and Combinations

1. A golf manufacturer makes irons with 7 different shaft lengths, 3 different grips, and 2 different club head materials. How many different combinations are offered?

2. A briefcase lock has 3 rotating cylinders, each containing 10 digits. How many numerical codes are possible?

3. How many 7-digit telephone numbers can be formed if the first digit cannot be 0 or 1?

Find each value.

4. $P(10, 7)$

5. $P(7, 7)$

6. $P(6, 3)$

7. $C(7, 2)$

8. $C(10, 4)$

9. $C(12, 4) \cdot C(8, 3)$

10. How many ways can the 4 call letters of a radio station be arranged if the first letter must be W or K and no letters can be repeated?

11. There are 5 different routes that a commuter can take from her home to her office. How many ways can she make a roundtrip if she uses different routes for coming and going?

12. How many committees of 5 students can be selected from a class of 25?

13. A box contains 12 black and 8 green marbles. How many ways can 3 black and 2 green marbles be chosen?

14. ***Basketball*** How many ways can a coach select a starting team of one center, two forwards, and two guards if the basketball team consists of three centers, five forwards, and three guards?

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