

Name: _____
Teacher: _____
Class/ Block: _____
Date: _____

Counting Principle

Please answer each question. Clearly identify your final answer!!
No work or explanation = No Credit

Phone Numbers:

NYZ - ABC - XXXX

Today all area codes had the form is NYZ, where N was any digit from 2 to 9, Y is 0-8, and Z is 0-9

1. How many area codes were possible?

Before 1995, all area codes had the form is NYZ, where N was any digit from 2 to 9, Y was 0 to 4, and Z was 1 to 9.

2. How many area codes are possible today?

The 7-digit numbers in a given area code have the form ABC - XXXX where X, B, and C can be any digit 0-9 and A is restricted to 2-9

3. How many 7-digit numbers are possible (note this is for EACH area code)

License Plates:

How many license plates can each state assign?

4. Georgia: 3-letters followed by 4-digits
5. Delaware: 6-digits
6. New Jersey: one letter followed by two digits and then three letters

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7. Florida: one Letter followed by three digits then two more letters
o How many license plates have all distinct letters/ numbers?

Passwords:

8. Which is harder to guess a 4-digit password or a 3-letter password?

9. A locker has a 3-number combination. The numbers are 0-35 and they do not repeat. How many combinations are possible?

10. How many pins are represented by the same sequence of keys as "2133"? (Note: keep in mind the total possible choices on each key)



11. How many pins are represented by the same sequence of keys as "5031"? (Note: keep in mind the total possible choices on each key)

12. How many different passwords can generated in the form **ABBBBCBC** if A is an odd digit C is a non-repeating even digit and B is a non-repeating letter?

13. How many different passwords can be generated in the form **ABCCBCD** if A is an even digit C is a non-repeating letter and B is a non-repeating odd digit and D is a symbol {!,@,#,\$, or %}?