

Counting Activity: Post your solution and how you use counting techniques to get the answer. If you used brute force, then list your combinations.

**Bugs Bunny**

- 1) How many triangles are determined by 8 lines, no 2 of them being parallel?

**Daffy Duck**

- 2) How many ways can we form an after school club out of 5 students, if two of the students (twins) must either both be in or out of the club and there must be at least 2 students in the club?

**Elmer Fudd**

- 3) In how many distinguishable ways can the letters of the word COLLEGE be arranged?

**Foghorn Leghorn**

- 4) In a class there are 23 girls and 32 boys. In how many ways can you pick 2 boys and 2 girls to form a committee?

**Henery Hawk**

- 5) A test has 10 multiple choice problems with 4 answers each. On this test you get penalized for guessing a wrong answer so it may be worth while to leave some answers blank. How many ways can the test be filled out?

**Marc Anthony**

- 6) How many factors does the number 180 have including 1 and itself.

**Marvin the Martian**

- 7) In the base 5 counting system, how many positive integers are there that are less than 10,000? Give your answer in base 10.

**Pepe Le Pew**

- 8) A musician plans to perform 5 selections for a concert. If he can choose from 8 different selections, how many different ways can he arrange his program?

**Petunia Pig**

- 9) A coach with 9 players is planning his rotations in a recreational league game. He is trying to give the players experience in all positions. He needs 6 on the field playing 3 different positions at a time. There are 2 forwards, 2 centers, and 2 defenders. How many ways can he arrange his players if doesn't matter whether a player is a right forward or a left forward, etc?

**Porky Pig**

- 10) How many 4-letter codes can be formed with the letters P, Q, R, S, T without repetition?

**Roadrunner**

- 11) A test has 5 multiple choice problems with 4 possible answers each and one set of matching problems with 6 terms and 6 definitions each of which can be used only once. How many ways can the test be completely filled out?

**She Devil**

- 12) A ten player team has 3 players that can play goalie. One of the goalies, only plays goalie. The other two can play any position. The teams other 7 players can play anything but goalie. How many of 7 players can play at a time?

**Speedy Gonzales**

- 13) A lottery draws five numbered balls out of a bin of 40 numbered balls. When you play the lottery, you also select 5 numbers out of 40. To win anything, you must match at least 3 of the numbers. How many ways can you win?

**Sylvester**

- 14) A signal is made by placing 3 flags, one above the other, on a flag pole. If there are 6 different flags available, how many different signals can be flown?

**Tazmanian Devil**

- 15) A credit company allocates 8-digit account numbers such as 1122-3421 where the digits 1 through 9 are used. How many different account numbers can there be?

**Tweety Bird**

- 16) How many factors does the number 192 have including 1 and itself.

**Wile E. Coyote**

- 17) A coed soccer team has a rule that their must be at least 3 females on the field out of 8 players at all time. If there are 5 females and 6 males on the team, how many ways can you field the team?

**Yosemite Sam**

- 18) How many different five ball combinations can be drawn from an urn in a lottery that has 40 numbered balls?

**Chip**

- 19) How many ways can 5 people be seated at a round table? Note that it doesn't matter where you sit, just who you are next to.

**Dale**

- 20) In the base 3 counting system, how many integers are there between and including  $-222$  and  $222$ ? (Use base 10 to give your answer.)

**Donald**

- 21) In how many different ways can the letters in the word PAYMENT be arranged if the letters are taken 5 at a time?

**Goofy**

- 22) How many lines are determined by 15 points, no 3 of them being collinear?

**Mickey**

- 23) In a test out of 30 questions a student must answer at least 28 questions correctly to get an A grade. How many ways can he take the test and receive an A grade?

**Minnie**

- 24) How many ways can you make a five digit even number out of the digits: 0, 1, 2, 3, and 4 with repetition allowed?

**Pluto**

- 25) Consider the simplified expansion of the expression  $(x+y+z)^5$ . In each term the exponents of each of the factors must add upto 5 and all exponents must be non-negative. How many terms are there?