Matthew Macauley **clemson-math4190**
Assignment HW_03_counting due 01/31/2019 at 11:59pm EST

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1. **(3 points)** Library/ASU-topics/setCount/sw10_1_7.pg
How many different ways can a race with 5 runners be completed? (Assume there is no tie.)
Your answer is : _____

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2. **(3 points)** Library/UBC/STAT/STAT302/HW01/HW01-03.pg

A test contains eight true/false questions. Assuming you attempt each question, in how many different ways could you answer the test?

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3. **(3 points)** Library/UBC/STAT/STAT302/HW01/HW01-04.pg

A man has five ties, six shirts, and five different pairs of trousers. How many different ways does he have to dress himself?

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4. **(3 points)** Library/UBC/STAT/STAT302/HW01/HW01-05.pg

A president, a treasurer, and a secretary are to be chosen from a committee with forty members. In how many ways could the three officers be chosen?

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5. **(3 points)** Library/Rochester/setAlgebra38Counting/sw10_2_19.pg
In how many ways can 4 students be seated in a row of 4 chairs if Jack insists on sitting in the first chair?
Your answer is : _____

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6. **(6 points)** Library/Mizzou/Finite_Math/Set_Theory_Addition_and_Multiplication_Principles/MultiplicationPrinciple3.pg
A standard Missouri state license plate consists of a sequence of two letters, one digit, one letter, and one digit. How many such license plates can be made?

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A standard New York state license plate consists of a sequence of three letters followed by three digits. How many such license plates can be made?

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7. **(9 points)** Library/Mizzou/Finite_Math/Set_Theory_Addition_and_Multiplication_Principles/MultiplicationPrinciple2.pg
A fair 6-sided die is rolled 8 times and the resulting sequence of 8 numbers is recorded.

How many different sequences are possible? _____

How many different sequences consist entirely of even numbers? _____

How many different sequences are possible if the first, third, and fourth numbers must be the same? _____

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8. **(3 points)** Library/Rochester/setAlgebra38Counting/sw10_2_60.pg
A school dance committee is to consist of 2 freshmen, 3 sophomores, 4 juniors, and 5 seniors. If 5 freshmen, 8 sophomores, 7 juniors, and 9 seniors are eligible to be on the committee, in how many ways can the committee be chosen?
Your answer is : _____

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9. **(3 points)** Library/Mizzou/Finite_Math/Set_Theory_Permutations_Combinations/SeatingArrangements.pg

The CEO of a company has a table in his office which can seat 4 employees. How many seating arrangements are possible if 4 out the 13 employees sit at the table?

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10. **(3 points)** Library/Westmont/EoDM3/Inquiry_4_1/iprob4_3.pg
A *ternary string* is a string made up of 0's, 1's. and 2's. How many ternary strings of length 7 are there?
Number of 7-digit ternary strings = _____

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11. **(3 points)** Library/UMN/algebraKaufmannSchwitters/ks_15_2_25.pg
How many 4-element subsets containing the letter A can be formed from the set $\{A,B,C,D,E,F,G\}$?
Answer: _____

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12. **(12 points)** Library/ASU-topics/setCount/pcount1.pg
A coin is tossed 14 times.
a) How many different outcomes are possible?

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b) How many different outcomes have exactly 6 heads?

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c) How many different outcomes have at least 2 heads ?

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d) How many different outcomes have at most 10 heads?

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13. **(6 points)** Library/ASU-topics/setCount/pcount2.pg
A boy has 4 red , 3 yellow and 3 green marbles. In how many ways can the boy arrange the marbles in a line if:
a) Marbles of the same color are indistinguishable?

_____

b) All marbles have different sizes?

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