# Permutations and combinations

MTH 225 -- Module 8A
28 October 2020

# The number 8! [select all that apply]

- Equals 36
- Equals 256
- Equals 40320
- Counts the number of 8-bit strings that are possible
- Counts the number of ways reorder an ordered list of 8 objects

# The number $P(30, 5)$ is [select all that apply]

- Equal to 30!/(25! 5!) = 142506
- Equal to 30!/25! = 17100720
- The number of ways to form a 5-element subset of a 30-element set
- The number of ways to select 5 people from a class of 30 to sit in chairs colored red, yellow, blue, green, purple

# The binomial coefficient $\binom{9}{5}$ equals

- 1.8
- 5! / 4! = 5
- 9! / (5! 4!) = 126
- 9! / 5! = 3024
- 9! / 4! = 15120
- None of the above

# More mixed counting problems!

# Recall that a hexadecimal number uses the digits 0-9 as well as the "digits" A-F. How many 4-digit hexadecimal numbers are possible?

None of the above

# An "anagram" of a word is just a rearrangement of its letters, for example "desserts" is an anagram of "stressed". The word "uncopyrightable" is the longest English word with no repeated letters in it. How many anagrams does it have?

- A
- B
- C
- D
- None of the above

# How many anagrams are there for the word "blob"?

- 4
- 12
- 24
- 64
- None of the above

# How many anagrams are there for the word "stressed"?

- 56
- 336
- 3360
- 40320
- None of the above