COT 3100 Quiz #3: Counting, Probability (Week of Apr 10, 2023) – M, T, W Version

Last Name: _____ First Name: _____

Circle Rec: M8am M4:30pm T10:30am W8am

1) (5 pts) How many permutations are there of the letters in the word "SPECIFICITY"? Please leave your answer in factorials, combinations and/or powers.

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2) (7 pts) How many ordered four-tuplets of integers, (a, b, c, d), are there with $1 \leq a < b < c < d \leq 30$? Please leave your answer in factorials, combinations and/or powers.

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3) (5 pts) A line passes through A(73, 35) and B(178, 230). How many **other points** with integer coordinates are on the line segment that connects A to B?

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4) (8 pts) A bag of prizes contains 20% transformer toys and 80% pez dispensers. Unfortunately, 15% of the transformer toys are defective and 5% of the pez dispensers are defective. An item is selected at random from the bag and is defective. What is the probability that the item is a transformer toy? **Please answer in the form of a fraction reduced to lowest terms.**

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