

Name: _____

MATH230 Discussion Quiz 4

20 minutes, 10 points total, closed note, no calculators

1: If $P(A) = P(B)$ for two events A and B, does $P(A|B) = P(B|A)$? Whether you think this is true or false, justify your answer (**3 points**)

2: Attention: If you or a loved one has been diagnosed with Mesothelioma, you may be entitled to financial compensation. Mesothelioma is a rare cancer linked to asbestos exposure, affecting 0.01% of people. A new test for Mesothelioma which is 99% accurate has been released and you tested positive. What is the probability you actually have Mesothelioma? Express your answer as a fraction a/b in simplest terms where $a, b > 0$ are integers. **Note:** 99% accuracy means 99% chance of testing positive, negative if you have it, don't have it respectively. (**4 points**)

3: Mark the following true or false (**1 point each**)

(a): A system of 2 linear equations in 3 variables can have a unique solution

(b): If a system of 3 linear equations in 3 variables has two solutions, it must have a 3rd solution

(c): In a row reduced matrix, the leading entry in any row is the largest entry in that row.