

Name _____

Student Number _____

STA107H5S Quiz 2A

1. (2 marks) Let A and B be events in some sample space S. Let $P(A \cap B) = 0$. What is $P(\bar{A} | B)$? How do you know this?

$$P(\bar{A} | B) = P(\bar{A} \cap B) / P(B) = P(B) / P(B) = 1$$

2. (3 marks) An urn contains 2 blue balls and 1 red ball. 2 balls are taken out at random without replacement. Let A be the event "2 blue balls were drawn". Let B be the event "at least 1 red ball was drawn". Find $P(A|B)$ and $P(A)$

$$P(A|B) = 0, P(A) = 1/3$$

3. (2 marks) Are events A and B independent? Explain. You might want to cite results from a previous question.

$$\text{Not independent as } P(A|B) \neq P(A)$$

4. (3 marks) Given that $P(A|B) = 0.3$, $P(B|A) = 0.2$ and $P(B) = 0.4$ find $P(A)$.

$$P(A) = 0.6$$