

Math 361, Section F1, Spring 2002
Quiz 2, January 25

Name: _____

1. 10 points Assume that

$$\mathbb{P}(A) = 0.5, \quad \mathbb{P}(B) = 0.6 \quad \text{and} \quad \mathbb{P}(B \setminus A) = 0.1.$$

- (a) 7 points Compute $\mathbb{P}(A|B)$
- (b) 3 points Are A and B independent?

ANSWERS

1.

$$\mathbb{P}(A|B) = \frac{\mathbb{P}(A \cap B)}{\mathbb{P}(B)} = \frac{\mathbb{P}(A) + \mathbb{P}(B \setminus A)}{\mathbb{P}(B)} = \frac{0.5 + 0.1}{0.6} = 1.$$

2. No, since $\mathbb{P}(A|B) = 1 \neq 0.5 = \mathbb{P}(A)$.