

# Math 206 - Quiz 2

January 31, 2018

Name \_\_\_\_\_

Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary.

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1. (1 point) Suppose  $X$  and  $Y$  are events with  $P(X) = 0.4$  and  $P(Y) = 0.3$ . Must it be true that  $P(X \cup Y) = 0.7$ . Briefly explain.

2. (1 point) Suppose  $A$  and  $B$  are events such that  $P(A) = 0.46$ ,  $P(B) = 0.68$ , and  $P(A \cup B) = 0.92$ . Determine  $P(A \cap B)$ .

3. (1 point) Four letters are selected at random without replacement from the word *EYJAFJALLAJOKULL*. What is the probability of spelling the word *FAKE*?

4. (2 points) A letter is selected at random from the first box and placed into the second box. Then a letter is selected at random from the second box.

F   O   O

O   X   X

Sketch the complete tree diagram for this experiment. Include the probabilities of each path.