Math 115 - Quiz 7

October 23, 2014

Name __key__

Score _____

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

1. (1 point) Of the cans produced by a company, 96% do not have a puncture, 93% do not have a smashed edge, and 89.3% do not have a puncture and do not have a smashed edge. Find the probability that a randomly selected can does not have a puncture or does not have a smashed edge.

$$\text{PROB OF NO PUNC OR NO SMASH} = 0.96 + 0.93 - 0.893$$

$$= \boxed{0.997}$$

2. (1 points) Refer to the problem above. What is the probability that a randomly selected can does have a smashed edge?
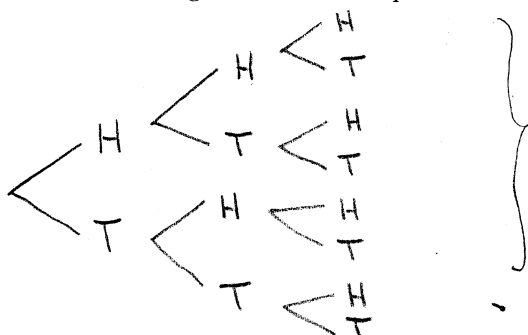
$$1 - 0.93 = \boxed{0.07}$$

3. (1 point) Find $P(B)$ if A and B are events with $P(A) = 0.5$, $P(A \cup B) = 0.9$, and $P(A \cap B) = 0.3$.

$$0.9 = 0.5 + P(B) - 0.3 \qquad \Rightarrow \boxed{P(B) = 0.7}$$

4. (2 points) Three coins are flipped.

   (a) Sketch the tree diagram for this experiment.

   EACH PATH IS EQUALLY LIKELY

   (b) What is the probability that at least two heads are obtained?

$$\{HHH, HHT, HTH, THH\}$$

   PROB IS $\boxed{\dfrac{4}{8}}$