

Math 206 - Quiz 3

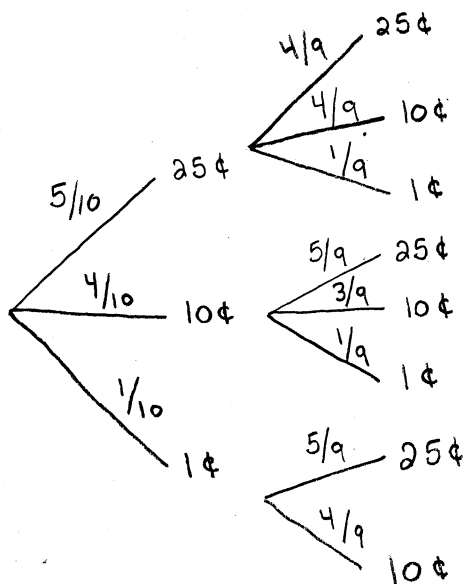
February 26, 2014

Name key

Score _____

Show each step to receive full credit. Supply explanations when necessary.

1. (3.5 points) A jar contains 5 quarters, 4 dimes, and 1 penny. Two coins are selected at random. What is the expected value?



Value	Prob
50¢	20/90
35¢	40/90
26¢	10/90
20¢	12/90
11¢	8/90

$$50 \left(\frac{20}{90} \right) + 35 \left(\frac{40}{90} \right) + 26 \left(\frac{10}{90} \right) + 20 \left(\frac{12}{90} \right) + 11 \left(\frac{8}{90} \right)$$

$$= \frac{2988}{90} = \boxed{33.2 \text{ ¢}}$$

2. (1.5 points) A card is drawn at random from a standard deck of playing cards. Let A be the event of drawing a face card, and let B be the event of drawing a queen. Compute $P(A|B)$ and $P(B|A)$. Be sure to indicate which is which.

$$P(A) = \frac{12}{52}, \quad P(B) = \frac{4}{52}, \quad P(A \cap B) = \frac{4}{52}$$

$$P(A|B) = \frac{P(A \cap B)}{P(B)} = \frac{4/52}{4/52} = \boxed{1}$$

$$P(B|A) = \frac{P(A \cap B)}{P(A)} = \frac{4/52}{12/52} = \frac{4}{12} = \boxed{\frac{1}{3}}$$

THESE SHOULD BE EASY TO COMPUTE WITHOUT THE FORMULAS BY THINKING ABOUT THE SAMPLE SPACE.