Math 153 - Quiz 6

March 17, 2016

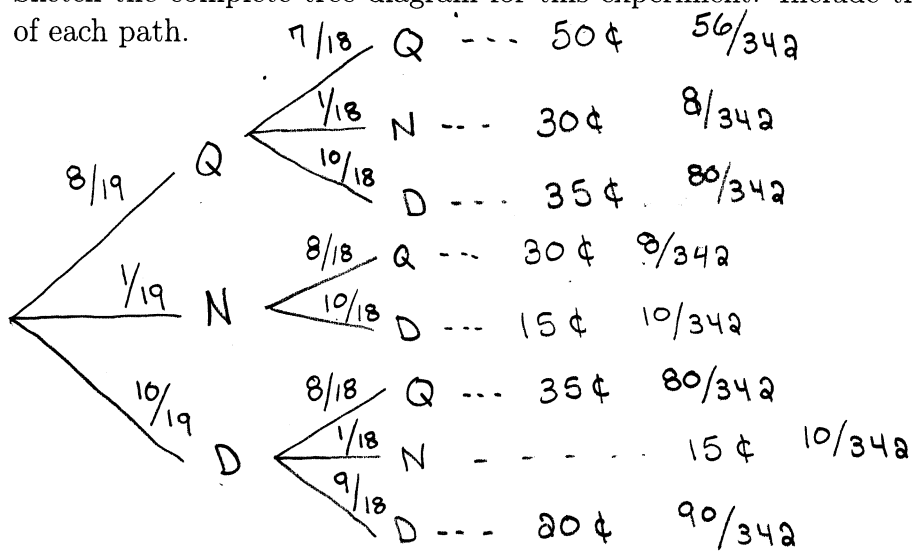
Name key

Score _____

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

1. (10 points) A jar contains 8 quarters, 10 dimes, and 1 nickel. Two coins are selected at random.

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



   (b) Let the random variable x represent the value (in cents) of your two-coin sample. What are the possible values of x?

   15, 20, 30, 35, 50

   (c) Compute the probability associated with each possible value of x.

   See (d)

   (d) Make a table showing the probability distribution for x.

x	15	20	30	35	50
$P(x)$	$\frac{20}{342}$	$\frac{90}{342}$	$\frac{16}{342}$	$\frac{160}{342}$	$\frac{56}{342}$

   (e) Find the mean value of x.

$$\frac{15(20)+20(90)+30(16)+35(160)+50(56)}{342} = \frac{10980}{342} \approx 32.1¢$$