

20
Dropped
#6

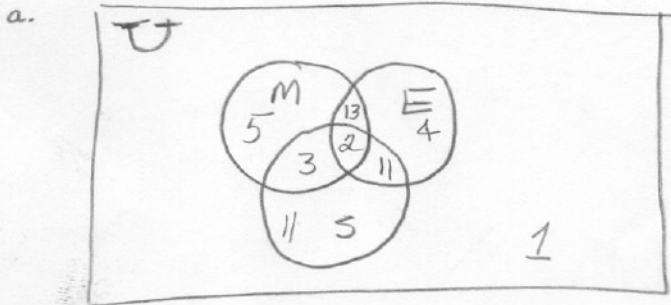
18

Name Key

Math 110
Quiz 4 – Probability Sect. 1-4

I. Complete the following problems, writing all fractions in simplest form (2 pts/problem).

1. A survey of 50 students was conducted with the following results: 23 students in music, 30 students in English, and 27 in social work. Fifteen took English and music, five took music and social work, 11 took English and social work only, and two took all three subjects.
- a. Create a Venn diagram for the problem described.
- b. Find the probability that a student takes only music.



$\frac{5}{50}$ b. $\frac{1}{10}$

2. A single card is chosen from a shuffled standard deck of 52 cards. Find the probability of getting a club or a six.

$\frac{13}{52} + \frac{4}{52} - \frac{1}{52}$

$\frac{16}{52}$ 2. $\frac{4}{13}$

3. A box has 30 marbles in it. There are fifteen red marbles, twelve blue marbles and ^{three} five green marbles.

- a. Find the probability that a person will select a blue marble.

$\frac{12}{30}$

3a. $\frac{2}{5}$

- b. What is the probability that a red or blue marble is selected?

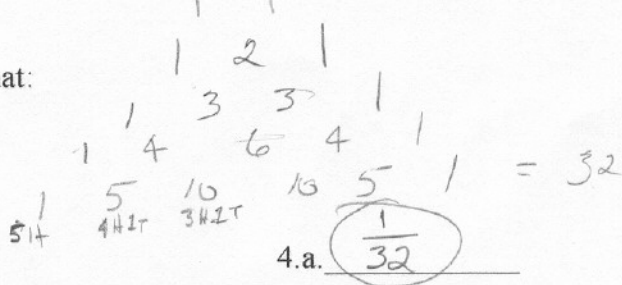
$\frac{27}{30}$

b. $\frac{9}{10}$

~~10~~
10

4. Five coins are tossed. What is the probability that:

a. All coins come up tails.



b. At least ^{four} ~~three~~ coins come up ^{heads} tails.

5 H can happen 1 way
4 H can happen 5 ways
Total 6 ways

$\frac{6}{32}$ b. $\frac{3}{16}$

5. A bowl contains a penny, nickel, dime and quarter. Two coins are selected in succession, without replacing the first coin. Construct the sample space for this experiment.

		P	N	D	Q
1 st coin	P	-	PN	PD	PQ
	N	NP	-	ND	NQ
	D	DP	DN	-	DQ
	Q	QP	QN	QD	-

II. True or False, if it is false correct the statement to make it true (2 pts/problem).

6. If a student guesses on four multiple-choice questions, ~~where~~ each question has four choices, then the probability that this student answers all of the questions correctly is $\frac{1}{16}$.

False, $\frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} \times \frac{1}{4} = \frac{1}{256}$

7. $P(A) = P(\text{not getting } A) - 1$

False $P(A) = 1 - P(\text{not getting } A)$