

Thursday 5/9

Name _____

Date _____

Advanced Algebra

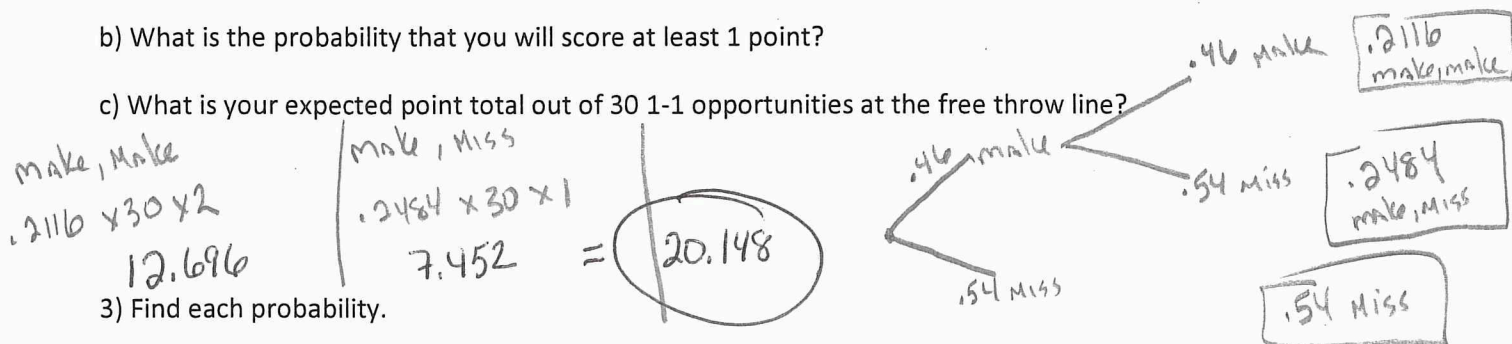
Unit 7 Probability- Review #3 for Probability Test

	9 th Grade	10 th Grade	11 th Grade	12 th Grade	Total
Ice Cream	18	37	85	114	254
Whipped Cream	5	18	37	58	118
Total	23	55	122	172	372

- a) What is the probability that a randomly chosen 10th grader likes Whipped Cream? $\frac{18}{55} \approx .33$
- b) What is the probability that you like Ice Cream GIVEN that you are an 11th grader? $\frac{85}{122} \approx .697$
- c) What is the probability that a randomly chosen person from the survey likes Ice Cream? $\frac{254}{372} \approx .68$
- d) What is the probability that a randomly chosen person from this survey likes Whipped Cream? $\frac{118}{372} \approx .32$
- e) What is the probability that a randomly chosen 9th Grader likes Ice Cream? $\frac{18}{23} \approx .783$

2) You are a 46% Free Throw Shooter. You are going to the free throw line for a 1-1 situation. This means that if you make the first shot you get another. If you miss the first shot, you do not get another.

- a) Make the tree Diagram for this situation.
- b) What is the probability that you will score at least 1 point?



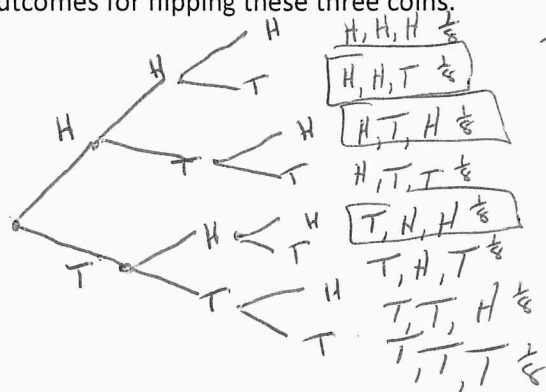
- 3) Find each probability.
- a) You have a single coin. What is the probability of flipping tails 4 times in a row.

b) You now have 3 coins. Make a tree diagram showing the outcomes for flipping these three coins. What is the probability of getting 1 Tails?

3a) $(\frac{1}{2})(\frac{1}{2})(\frac{1}{2})(\frac{1}{2})$

$\frac{1}{16} = .0625$

3b



$\frac{1}{8} \cdot 3 =$

$\frac{3}{8}$

$.375$

4) Give an Example of Gamblers Fallacy.

5) Make your list for rolling 2 dice. Answer the following questions:

36 possibilities

- | | | | | | |
|-----|-----|-----|-----|-----|-----|
| 1-1 | 2-1 | 3-1 | 4-1 | 5-1 | 6-1 |
| 1-2 | 2-2 | 3-2 | 4-2 | 5-2 | 6-2 |
| 1-3 | 2-3 | 3-3 | 4-3 | 5-3 | 6-3 |
| 1-4 | 2-4 | 3-4 | 4-4 | 5-4 | 6-4 |
| 1-5 | 2-5 | 3-5 | 4-5 | 5-5 | 6-5 |
| 1-6 | 2-6 | 3-6 | 4-6 | 5-6 | 6-6 |

P(Product ≥ 16)?

$\frac{1}{36}$

P(sum to 9 and have a difference of 1)?

$\frac{2}{36}$

P(roll a sum of ≤ 9 , Given you roll a 5 on first roll)

$\frac{4}{6}$

6) A 12th grade class has 491 students. There are 350 students enrolled in Music Class, 285 students enrolled in English, and there are 200 students who are enrolled in both. Draw the Venn Diagram and list the 6 probabilities and find out how many students do neither of these subjects.

$P(A) = .71$ $P(B) = .58$ $P(A \cap B) = .41$ $P(A \cup B) = .88$ $P(A|B) = \frac{200}{285} = .7$ $P(B|A) = \frac{200}{350} = .57$

7) The probability that a randomly selected students at Jennifer's school has a dog is .74. The probability that a randomly selected student has a cat is .42. The probability that a randomly selected student has neither of these animals is .06.

Draw a Venn Diagram and list the 6 probabilities.

$a + b = .74$
 $b + c = .42$
 $a + b + c = .94$
 $c = .2$

8) $P(A \cup B) = .56$ $P(A) = .28$ $P(B) = .33$ Find $P(A \cap B)$

9) $P(A|B) = .3333333333$ $P(B) = .48$ Find $P(A)$

$.3333 = \frac{P(A \cap B)}{.48}$ $P(A \cap B) = .15984$

of not enough information

10) You have 8 shirts, 12 pants, and 2 shoes. How many shirt, pants, and jacket combinations are possible?

$8 \times 12 \times 2 = 192$

11) You are taking a test in English. You have to answer 3 of the 7 prompts provided. How many different question combinations are possible?

${}^7C_3 = \frac{7!}{3!4!} = \frac{7 \cdot 6 \cdot 5}{3 \cdot 2} = 35$ combos

12) You are a part of the Green team at Washburn. They will be electing officers to run the club. There is a president, vice-president, and a person in charge of advertisement. There are 20 members. How many different combinations are there of possible officers.

${}^20P_3 = \frac{20!}{17!} = 20 \times 19 \times 18 = 6,840$