

## Welcome! Reflect and Turn in!

|   | Assignment<br>Effort Grade<br>(Circle One) | Comments<br>(What was interesting or<br>challenging?) |
|---|--|---|
| <b>Monday</b><br>Date: <u>5-21</u><br>Topic: <u>3E.1 &amp; 3E.2 Venn Diagrams</u>         | 0 1 2                                      |   |
| <b>Tuesday</b><br>Date: <u>5-22</u><br>Topic: <u>Venn Diagrams Day 2</u>                  | 0 1 2                                      |   |
| <b>Wednesday</b><br>Date: <u>5-23</u><br>Topic: <u>Venn Diagrams Day 3</u>                | 0 1 2                                      |   |
| <b>Thursday</b><br>Date: <u>5-24</u><br>Topic: <u>Venn Diagrams Day 4 (Snap/Insta/FB)</u> | 0 1 2                                      |   |
| <b>Friday</b><br>Date: <u>5-25</u><br>Topic: <u>(Nothing due today!)</u>                  | 0 1 2                                      |   |

HAPPY FRIDAY! :)

...A look at the next 2 weeks:

Fri. 5/25 - Probability Topics

Tues. 5/29 - Probability Topics

Wed. 5/30 - **Unit 8 Test**

Thurs. 5/31 - Final Review

x Paulson absent Friday 6/1 Mr. Enlke

Fri. 6/1 - Final Review

Mon. 6/4 - Final Review

Tues. 6/5 - **FINAL EXAMS**

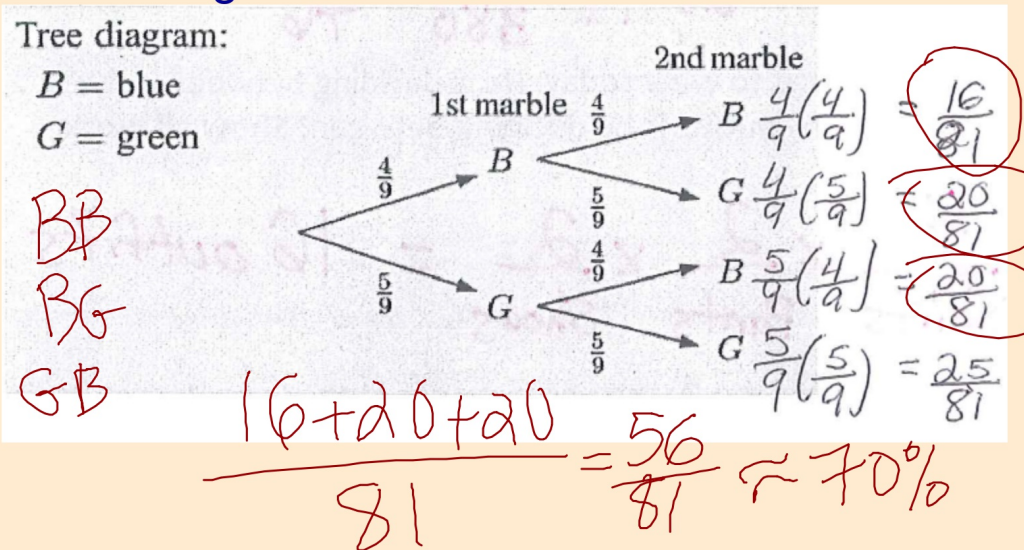
Wed. 6/6 - **FINAL EXAMS**

(hrs 2, 3, 4)

(hrs 1, 5, 6, 7)

## Warm-up:

Based on the tree diagram, find the probability of choosing **at least** one blue marble.



## Class Plan

1) Warm-up

2) Go over Quiz 8.1

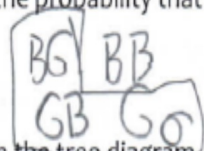
3) Unit 8 Probability Review -  
part 1.



## "This mistake surprised me!"

c) What is the probability that at least one marble is green? Show all work.

NOT  
EQUAL  
PROBABILITIES →



$$\frac{3}{4} = 75\%$$

d) Based on the tree diagram, does the event of drawing the first marble af

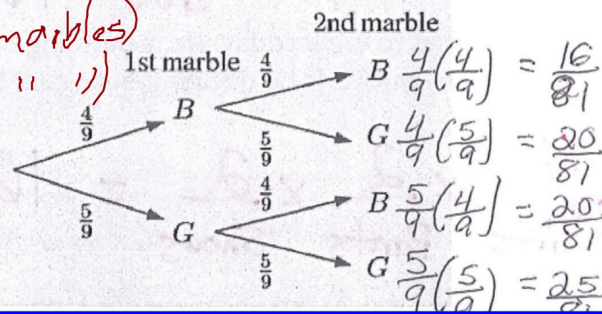
How does the tree diagram show the unequal outcomes?

Tree diagram:

B = blue

G = green

(4 marbles)  
(5 " " )



## "This mistake helps us learn how to count outcomes"

6. Ms. Paulson is making some vegetable stew and has 5 different vegetables in her refrigerator: spinach, carrots, bell peppers, kale, and peas. How many ways could she select 2 different vegetables for the stew? List the possible combinations of the two vegetables.

$SC = CS$

|   |   |   |   |   |
|---|---|---|---|---|
| S | C | B | K | P |
| C | S | S | S | S |
| B | S | B | B | B |
| K | S | B | K | K |
| P | S | B | K | P |

20 ways

$$\begin{array}{r} \underline{5} \times \underline{4} = 20 \\ \text{1st} \quad \text{2nd} \end{array}$$

## Unit 8 Quiz 1 Probability

\*Look over highlighted errors - this is where the mistake begins.

\*Make quiz corrections... you will have an opportunity to improve this score! (Unit test Wednesday 5-30)

\*Choose a blank quiz - your version or the other version.



## Version 2 - correct the mistake!!!

1. Hamza rolls two dice. He rolls a sum of eight  $\frac{13}{40}$  times in his experiment. (Experimental)  $\approx 32.5\%$
- b) What is the theoretical probability of getting a sum of eight? (Theory)  $\frac{5}{36} = 14\%$
- a) Based on the theoretical probability, if he were to roll the dice 100 times, how many times should he roll a sum of eight?  $6 \cdot 6 = 36$  outcomes

13.8 rolls of 8

$$\frac{5}{36} = \frac{x}{100}$$

$$\frac{500}{36} = \frac{36x}{36}$$

~~$x \approx 11$  times~~

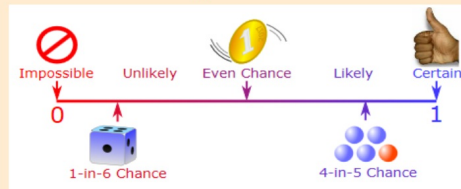
|   |   |   |    |    |    |
|---|---|---|----|----|----|
| 2 | 3 | 4 | 5  | 6  | 7  |
| 3 | 4 | 5 | 6  | 7  | 8  |
| 4 | 5 | 6 | 7  | 8  | 9  |
| 5 | 6 | 7 | 8  | 9  | 10 |
| 6 | 7 | 8 | 9  | 10 | 11 |
| 7 | 8 | 9 | 10 | 11 | 12 |

c) Was the experimental probability similar to the theoretical? When do the two become similar? A sum of 8 should occur 14% of the time, not 32.5%. It occurred more than what should. It would be closer with more trials in the experiment



## Unit 8: Probability

Do: Probability WS  
(Quiz 1 Topics)



When done: Work on HW, or read.



Cats average 20 hours of sleep a day... HAPPY FRIDAY!

1) During the regular season, a basketball player makes 32 out of 40 free throw shots.

a) What is the probability of making a free throw? \_\_\_\_\_

b) If the player shoots 12 free throws during play-offs, how many would you expect them to make? **Show all work.**

## SOLUTION

1) During the regular season, a basketball player makes 32 out of 40 free throw shots.

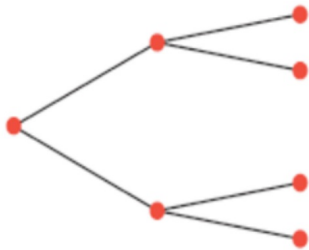
a) What is the probability of making a free throw?  $\frac{32}{40} = \frac{4}{5} = 80\%$

b) If the player shoots 12 free throws during play-offs, how many would you expect them to make? **Show all work.**

$$\frac{4}{5} = \frac{x}{12} \quad 5x = 48$$
$$x = \frac{48}{5} \approx 9.6$$

Player should expect to make 9 or 10 of their free throws.

2) The probability of a delayed flight on a foggy day is  $\frac{9}{10}$ . The probability of a delayed flight when it is **not** foggy is  $\frac{1}{12}$ . The probability of a foggy day is  $\frac{1}{20}$ .



a. Complete the diagram showing probabilities on each branch.

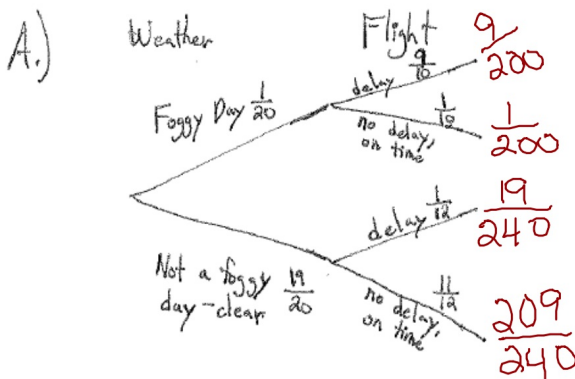
b. Find the probability of:

i) a foggy day and a delayed flight.

ii) a delayed flight.

iii) a flight that is **not** delayed.

## SOLUTION



B.) ~~...~~

i.  $P(F, d) = \frac{1}{20} \cdot \frac{9}{10} = \frac{9}{200} = 0.045 = 4.5\%$

ii.  $P(F, d) + P(NF, d) =$

$$\frac{1}{20} \cdot \frac{9}{10} + \frac{19}{20} \cdot \frac{1}{12} = \frac{9}{200} + \frac{19}{240}$$

$$= 0.1242$$

$\approx 12.4\%$

iii.  $P(F, nd) + P(NF, nd) =$

$$\frac{1}{20} \cdot \frac{1}{10} + \frac{19}{20} \cdot \frac{11}{12} = \frac{1}{200} + \frac{209}{240}$$

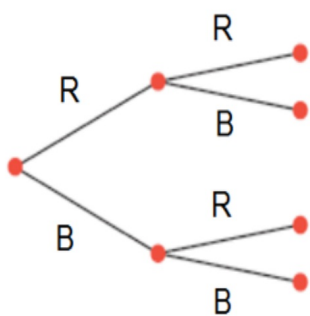
$$= 0.8758333$$

$\approx 87.6\%$

$$\frac{54}{1200} + \frac{76}{1200} + \frac{95}{1200} + \frac{1045}{1200} = 100\%$$

2)

3) A box of pens contains 4 red and 11 blue pens. Ms. Berg chooses one pen at random. She looks at the pen, returns it to the box and chooses a 2<sup>nd</sup> pen. The tree diagram shows Ms. Berg's two possible choices.

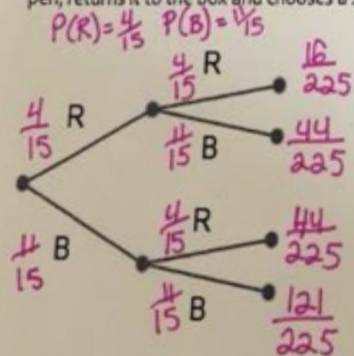


- a. Complete the diagram showing probabilities on each branch, **and at the end of each path.**
- b. What is the probability that Ms. Berg chose **at least** one blue pen? **SHOW WORK.**

c) Why does the first pen's probability **NOT** affect the probability of choosing the 2<sup>nd</sup> pen?

# SOLUTION

3) A box of pens contains 4 red and 11 blue pens. Ms. Berg chooses one pen at random. She looks at the pen, returns it to the box and chooses a 2<sup>nd</sup> pen. The tree diagram shows Ms. Berg's two possible choices.



a. Complete the diagram showing probabilities on each branch, and at the end of each path. ✓

b. What is the probability that Ms. Berg chose at least one blue pen? **SHOW WORK.**

$$P(BB+BR+RB) = \frac{121}{225} + \frac{44}{225} + \frac{44}{225}$$
$$= \frac{209}{225} \approx 92.9 \approx 93\%$$

c) Why does the first pen's probability **NOT** affect the probability of choosing the 2<sup>nd</sup> pen?

Ms. Berg puts the 1<sup>st</sup> chosen pen back in the box before she chooses a 2<sup>nd</sup> one. The same quantities of pens are in the box for both pen choices.



## Exercises...

- 1) Correct mistakes from quiz
- 2) Finish Worksheet

Enjoy the nice weather!

