



Algebra 2 – Year 2

Partner Test: Lessons 11.3-11.4

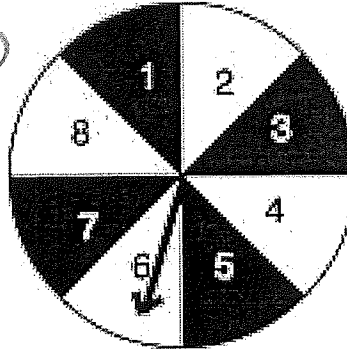
Name: _____

Date: _____ Hour: _____

Show the set up for ALL problems!! Express all probabilities as a reduced fraction and percent, to the nearest tenth.

1. The spinner shown is spun once. Find the probability that you land on a number greater than 3 or black. $P(A) + P(B) - P(A \text{ and } B)$

$$\frac{5}{8} + \frac{4}{8} - \frac{2}{8} = \frac{7}{8}$$



2. $\frac{7}{8}$ FRACTION 87.5% PERCENT

- For 2-3, (a) tell whether the events are inclusive or mutually exclusive, by circling your choice (1 pt).
 (b) Then find the probability of each pair of events, as a reduced fraction and a percent, to the nearest tenth.

Each of the numbers 1 to 9 is written on a card. The cards are placed in a stack, and one is drawn at random.

1 2 3 4 5 6 7 8 9

2. digit is odd or a multiple of 3

$$\frac{5}{9} + \frac{3}{9} - \frac{2}{9} = \frac{6}{9} = \frac{2}{3}$$

a. INCLUSIVE MUTUALLY EXCLUSIVE
 b. $\frac{2}{3}$ FRACTION 66.7% PERCENT

3. digit is prime or is greater than 7

$$\frac{4}{9} + \frac{2}{9} = \frac{6}{9} = \frac{2}{3}$$

a. INCLUSIVE MUTUALLY EXCLUSIVE
 b. $\frac{2}{3}$ FRACTION 66.7% PERCENT

4. A bag contains 2 black marbles, 7 white marbles, 6 green marbles, and 5 blue marbles. An experiment consists of taking one marble out of the bag, replacing it and then selecting another marble.

- a. Determine whether the events are independent or dependent.

a. INDEPENDENT DEPENDENT

- b. What is the probability of selecting a blue marble and then a green marble? $P(A) \cdot P(B)$

$$\frac{5}{20} \cdot \frac{6}{20} = \frac{30}{400} = \frac{3}{40}$$

b. $\frac{3}{40}$ FRACTION 7.5% PERCENT

5. Andrew and Jeremy are playing "War" with a standard deck of cards. Considering the full deck, what is the probability that Andrew has a red card and Jeremy has a black?

$$\overset{A}{\frac{26}{52}} \cdot \overset{B}{\frac{26}{51}} = \frac{13}{51}$$

$$5. \quad \frac{\frac{13}{51}}{\text{FRACTION}} \quad \frac{25.5\%}{\text{PERCENT}}$$

6. Consider a drawer that contains 6 black socks, 4 brown socks, and 8 white socks. One sock is taken at random, NOT replaced, and then another sock is taken. Find each probability.

a. $P(\overset{A}{\text{black}}, \text{ then } \overset{B}{\text{white}})$.

$$\frac{6}{18} \cdot \frac{8}{17} = \frac{8}{51}$$

$$a. \quad \frac{\frac{8}{51}}{\text{FRACTION}} \quad \frac{15.7\%}{\text{PERCENT}}$$

b. $P(\text{white}, \text{ then white})$.

$$\frac{8}{18} \cdot \frac{7}{17} = \frac{28}{153}$$

$$b. \quad \frac{\frac{28}{153}}{\text{FRACTION}} \quad \frac{18.3\%}{\text{PERCENT}}$$

7. For one roll of a die, let A be the event "odd numbers" and let B be the event "3 or 4". Find each probability, as an unreduced fraction. 1 2 3 4 5 6

a. $P(A)$

$$\frac{3}{6}$$

b. $P(B)$

$$\frac{2}{6}$$

a. _____

$$b. \quad \frac{2}{6}$$

c. $P(A \text{ and } B)$

$$\frac{1}{6}$$

d. $P(B|A)$

$$\frac{P(A \text{ and } B)}{P(A)} = \frac{1}{3}$$

c. _____

$$d. \quad \frac{1}{3}$$

8. The following table shows national employment statistics. Use the table to find each probability, as an unreduced fraction.

Number of Men and Women in Different Occupations (thousands)			
	Professionals	Sales People	Laborers
Men	4190	2588	2951
Women	4747	3213	1432

9729
9392

a. $P(\text{male} | \text{professional})$

$$\frac{P(\text{male and pro})}{P(\text{pro})} = \frac{4190}{8937}$$

b. $P(\text{laborer} | \text{female})$

$$\frac{P(\text{laborer and female})}{P(\text{female})} = \frac{1432}{9392}$$

a. _____

b. _____

8937 5801 4383



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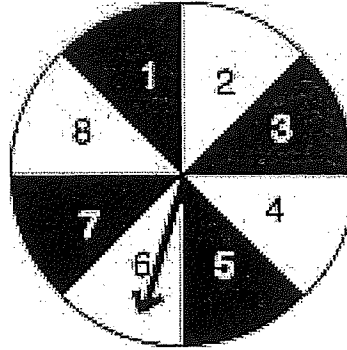
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2. _____
 FRACTION PERCENT

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 (b) Then find the probability of each pair of events, as a reduced fraction and a percent, to the nearest tenth.

Each of the numbers *1 to 9* is written on a card. The cards are placed in a stack, and one is drawn at random.

2. digit is odd or a multiple of 3

- a. INCLUSIVE MUTUALLY EXCLUSIVE

- b. _____
 FRACTION PERCENT

3. digit is prime or is greater than 7

- a. INCLUSIVE MUTUALLY EXCLUSIVE

- b. _____
 FRACTION PERCENT

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- b. _____
 FRACTION PERCENT

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 FRACTION PERCENT

6. Consider a drawer that contains 6 black socks, 4 brown socks, and 8 white socks. One sock is taken at random, NOT replaced, and then another sock is taken. Find each probability.

a. $P(\text{black, then white})$. a. _____
 FRACTION PERCENT

b. $P(\text{white, then white})$. b. _____
 FRACTION PERCENT

7. For one roll of a die, let A be the event "odd numbers" and let B be the event "3 or 4". Find each probability, as an unreduced fraction.

a. $P(A)$ b. $P(B)$ a. _____

b. _____

c. $P(A \text{ and } B)$ d. $P(B|A)$ c. _____

d. _____

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a. $P(\text{male} | \text{professional})$ b. $P(\text{laborer} | \text{female})$ a. _____

b. _____