

Outcome- the _____ result of a _____ or _____

Event- a _____ outcome or a _____ of _____

Sample space – _____ of _____ possible _____

Probability is a number from _____ to _____ that tells you how _____ something is to happen.

Theoretical probability describes the likelihood of an _____ based on mathematical reasoning

Experimental Probability can be found when a _____ space consists of real _____.

Experimental Probability of an event $P(E) = \frac{\text{Number}}{\text{number}} = \frac{\text{occurs}}{\text{done}}$

Probability or Theoretical Probability of an event $P(E) = \frac{\text{Number}}{\text{number}} = \frac{\text{outcomes}}{\text{outcomes}}$

Compliment of an event consists of _____ the possible outcomes in the sample space that are _____ part of the event

Probability of a compliment $P(\text{event}) + P(\text{non-event}) = 1$ and $P(\text{non-event}) = 1 - P(\text{event})$

Practice A – Fill in the table for number 1, then use that information to answer the questions in 2

<p>1. Find the possible outcomes of rolling 2 regular 6 sided dice.</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;"></td> <td style="width: 12.5%;">1</td> <td style="width: 12.5%;">2</td> <td style="width: 12.5%;">3</td> <td style="width: 12.5%;">4</td> <td style="width: 12.5%;">5</td> <td style="width: 12.5%;">6</td> </tr> <tr> <td>1</td> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>2</td> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>3</td> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>4</td> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>5</td> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>6</td> <td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>		1	2	3	4	5	6	1							2							3							4							5							6							<p>2. Assuming you are going to roll 2 regular 6 sided dice, find the following probabilities</p> <p>a. P (sum of 7) _____</p> <p>b. P(odd number) _____</p> <p>c. P(even number) _____</p> <p>d. P(doubles) _____</p> <p>e. P(non doubles) _____</p>
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Practice B – Find the theoretical probabilities in #1 and the Experimental Probabilities in #2

<p>1. You spin a spinner that has 15 equal-sized sections numbered 1 to 15. Find the theoretical probability of landing on the given section(s) of the spinner.</p> <p>1. P(15) _____ 2. P(odd) _____</p> <p>3. P(prime) _____ 4. P(not 5) _____</p> <p>5. P(even) _____ 6. P(odd) _____</p> <p>7. P(>8) _____ 8. P(< 5) _____</p>	<p>2. Find the experimental probability that a student selected at random makes the given response.</p> <p>a. P(basketball) _____</p> <p>b. P(soccer) _____</p> <p>c. P(baseball) _____</p> <p>d. P(football) _____</p> <p>e. P(other) _____</p>	<p style="text-align: center;">Favorite Sport Survey</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 70%;">Sport</th> <th style="width: 30%;">Number of Responses</th> </tr> </thead> <tbody> <tr> <td>Basketball</td> <td>30</td> </tr> <tr> <td>Baseball</td> <td>22</td> </tr> <tr> <td>Football</td> <td>34</td> </tr> <tr> <td>Soccer</td> <td>20</td> </tr> <tr> <td>Other</td> <td>14</td> </tr> </tbody> </table>	Sport	Number of Responses	Basketball	30	Baseball	22	Football	34	Soccer	20	Other	14
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Compound Event – _____ two or more events, using the word _____ or the word _____.

The word “or” in probability means the _____ \cup of two _____,

The word “and” in probability means the _____ \cap of two _____,

Mutually exclusive events – have no _____ outcomes. $P(A \cap B) = 0$

Overlapping Events – events have at _____ one common _____

Probability of A or B of Mutually exclusive events – $P(A \cup B) = P(A) + P(B)$

Probability of A or B of Overlapping events – $P(A \cup B) = P(A) + P(B) - P(A \cap B)$

Practice C – Write using set notation and find the probability when rolling a standard 6 sided die

1. What is the probability of getting an even number or a number greater than 3 comes up?

a. Possible Evens _____

b. Possible #s > 3 _____

c. Mutually exclusive or Overlapping events

d. $P(\text{Even} \cup >3) =$ _____

2. What is the probability of rolling a 2 or an odd number?

a. Possible 2s _____

b. Possible odds _____

c. Mutually exclusive or Overlapping events

d. $P(2 \cup \text{odd}) =$ _____

3. Why can you use $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$ for both mutually exclusive events and overlapping events?

Practice D -- You spin a spinner that has 12 equal-sized sections numbered 1 to 12. Find each probability.
Show work

1. $P(3 \text{ or } 4)$

2. $P(\text{even or } 7)$

3. $P(\text{even or odd})$

4. $P(\text{multiple of } 3 \text{ or odd})$

5. $P(\text{odd or multiple of } 5)$

6. $P(\text{less than } 5 \text{ or greater than } 9)$

7. $P(\text{even or less than } 8)$

8. $P(\text{multiple of } 2 \text{ or multiple of } 3)$

9. $P(\text{odd or greater than } 4)$

10. $P(\text{multiple of } 5 \text{ or multiple of } 2)$