

Probability Worksheet #6 (Compound)

Name: Key Period: _____ Date: HW 3A

Do the work on a separate piece of paper and show all your work. The correct answers are on at the bottom of the page

Find the probability for each problem below.

<p>1. You roll a single die numbered from 1 to 6 twice. What is the probability of rolling a 6 the first time and an odd number the second?</p> $P(6 \text{ and odd}) = \frac{1}{6} \cdot \frac{3}{6} = \frac{3}{36} = \frac{1}{12}$	<p>2. A jar contains 12 caramels, 7 mints and 16 dark chocolates. What is the probability of selecting a dark chocolate and then a caramel?</p> $\frac{16}{35} \cdot \frac{12}{34} = \frac{192}{1190} = \frac{96}{595} \text{ or } 0.161$
<p>3. The numbers 4 through 14 are placed in a bowl and drawn at random then replaced after being drawn. What is the probability of drawing the number 14 and then a number less than 12?</p> $\frac{1}{11} \cdot \frac{8}{11} = \frac{8}{121}$	<p>4. In a deck of 52 playing cards, what is the probability of drawing a club and then a second club?</p> $\frac{13}{52} \cdot \frac{12}{51} = \frac{156}{2652} = \frac{1}{17} \text{ or } 0.059$
<p>5. The letters that form the word MISSISSIPPI are placed in a bowl. What is the probability of choosing a vowel, replacing it and then drawing a "P"?</p> $\frac{4}{11} \cdot \frac{2}{11} = \frac{8}{121}$	<p>6. In a deck of 52 playing cards, what is the probability of drawing a 3 of spades and then a 4 of spades?</p> $\frac{1}{52} \cdot \frac{1}{51} = \frac{1}{2652} \text{ or } .000377$
<p>7. You have a jar of jelly beans in front of you with the following flavors: 12 are strawberry, 17 are blueberry, 5 are pineapple and 13 are coconut. What is the probability of selecting either a strawberry or coconut flavored jelly bean replacing it and then drawing either a blueberry or pineapple jelly bean?</p> $\frac{25}{47} \cdot \frac{22}{47} = \frac{550}{2209} \text{ or } 0.249$	<p>8. There are 27 students available to represent the upperclassmen at a fair. 13 are Juniors and 14 are Seniors. What is the probability that the first one chosen will be a Senior and the second one will be a Junior?</p> $\frac{14}{27} \cdot \frac{13}{26} = \frac{182}{702} = \frac{7}{27} \text{ or } 0.259$
<p>9. In a deck of 52 playing cards what is the probability of drawing a card that is a picture card (A,K,Q,J) replacing it and then drawing either a heart or a spade?</p> $\frac{16}{52} \cdot \frac{26}{52} = \frac{16}{104} = \frac{2}{13} \text{ or } 0.154$	<p>10. There are 45 men on the roster of the football team. 3 are quarterbacks, 10 are offensive lineman, 6 are defensive lineman, 4 are running backs, 6 are linebackers, 8 are defensive backs, 1 is a kicker and the rest are receivers. What is the probability that out of two players chosen at random they would be a QB and a receiver?</p> $\frac{3}{45} \cdot \frac{7}{44} = \frac{21}{1980} = \frac{7}{660} \text{ or } 0.01$
<p>11. You have a jar of marbles in front of you with the following flavors: 7 are red, 12 are blue, 6 are yellow and 9 are white. What is the probability of selecting marble that is not red, replacing it and then one that is white?</p> $\frac{27}{34} \cdot \frac{9}{34} = \frac{153}{1156} = \frac{9}{68} \text{ or } 0.132$	<p>12. There are 25 men on the roster of the baseball team. 3 are catchers, 8 are 8 Pitchers infielders, 6 are outfielders and the remainder are pitchers What is the probability that out of two players chosen at random they would be a pitcher and an infielder?</p> $\frac{8}{25} \cdot \frac{8}{24} = \frac{64}{600} = \frac{8}{75} \text{ or } .107$

Key HW 3A

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Find the probability for each problem below.

<p>13. You roll a single die numbered from 1 to 6. What is the probability of rolling a number greater than 3 and then a number less than 3?</p> <p style="text-align: center;">$\boxed{0}$</p>	<p>14. You have the following coins in your pocket: 5 quarters, 6 dimes, 2 nickels and 12 pennies. What is the probability you will draw a penny and then a dime?</p> <p style="text-align: center;">$\frac{12}{25} \cdot \frac{6}{24} = \frac{72}{600} = \boxed{\frac{3}{25} \text{ or } .12}$</p>																																																	
<p>15. The letters that form the word ALGEBRA are placed in a bowl. What is the probability of choosing a letter other than "A" and then choosing an "A"?</p> <p style="text-align: center;">$\frac{5}{7} \cdot \frac{2}{6} = \frac{10}{42} = \boxed{\frac{5}{21} \text{ or } 0.238}$</p>	<p>16. In a deck of 52 playing cards, what is the probability of drawing either a heart or a club than a spade or a diamond if each card is returned to the deck before drawing the next one?</p> <p style="text-align: center;">$\frac{26}{52} \cdot \frac{26}{52} = \frac{676}{2704} = \boxed{\frac{1}{4} \text{ or } 0.25}$</p>																																																	
<p>17. You have a jar of jelly beans in front of you with the following flavors: 12 are lime, 17 are papaya, 5 are mango and 13 are bubble gum. What is the probability of selecting either a lime or bubble gum flavored jelly bean followed by a mango jelly bean?</p> <p style="text-align: center;">$\frac{25}{47} \cdot \frac{5}{46} = \frac{125}{2162} = \boxed{0.058}$</p>	<p>18. You roll a pair of dice. What is the probability of rolling a 2 and then rolling a 7?</p> <table style="margin-left: auto; margin-right: auto;"> <tr><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr> <tr><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td></tr> <tr><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td></tr> </table> <p style="text-align: center;">$\frac{1}{36} \cdot \frac{6}{36} = \boxed{\frac{1}{216} \text{ or } .0046}$</p>		1	2	3	4	5	6	1	2	3	4	5	6	7	2	3	4	5	6	7	8	3	4	5	6	7	8	9	4	5	6	7	8	9	10	5	6	7	8	9	10	11	6	7	8	9	10	11	12
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<p>19. In a deck of 52 playing cards what is the probability of drawing a picture card (A,K,Q,J) that is also a diamond followed by any picture card?</p> <p style="text-align: center;">$\frac{4}{52} \cdot \frac{15}{51} = \frac{60}{2652} = \boxed{\frac{5}{221} \text{ or } .023}$</p>	<p>20. On a spinner there are 10 numbers. What is the probability that the spinner will land on a 5 in two successive spins?</p> <p style="text-align: center;">$\frac{1}{10} \cdot \frac{1}{10} = \boxed{\frac{1}{100} \text{ or } 0.01}$</p>																																																	
<p>21. You have a jar of marbles in front of you 7 are cordovan, 12 are yellow, 6 are white and 9 are red. What is the probability of selecting a marble that is not white, followed by a marble that is cordovan?</p> <p style="text-align: center;">$\frac{28}{34} \cdot \frac{7}{33} = \frac{196}{1122} = \boxed{\frac{98}{561} \text{ or } 0.175}$</p>	<p>22. In your wallet you have the following paper money: 5 singles, 2 fives, 4 tens and 6 twenties. What is the probability if you give two of the bills to the Salvation Army guy ringing the bell as you exit Wal-Mart that you will not give him a twenty?</p> <p style="text-align: center;">$\frac{11}{17} \cdot \frac{10}{16} = \frac{110}{272} = \boxed{\frac{55}{136} \text{ or } .404}$</p>																																																	
<p>23. After shooting four shots for 5 minutes, the player had made 25 shots out of 60. What is the probability in the big game that if he needs to make two free throws to win the game in a row he will do so?</p> <p style="text-align: center;">$\frac{25}{60} \cdot \frac{25}{60} = \boxed{\frac{5}{12} \text{ or } 0.417}$</p>	<p>24. The letters that form the word MATHEMATICS are placed in a bowl. What is the probability of choosing a letter that is a vowel followed by an "M"?</p> <p style="text-align: center;">$\frac{4}{11} \cdot \frac{2}{10} = \frac{8}{110} = \boxed{\frac{4}{55} \text{ or } 0.073}$</p>																																																	