|  |  |
| --- | --- |
| NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_ | **Probability** |
| Stats – Binomial Distribution | **DATE: Thursday, May 25, 2017** |

Review:

The baseball team has played against 8 teams this year. It has beat 3 of them, how many different groups of 3 teams could it have beat (Order doesn’t matter, so Cheverus, Windham, Westbrook is the same as Windham, Westbrook,Cheverus))

|  |  |
| --- | --- |
| There are 14 people in this class, Im going to put 2 people in the chairs at the front . How many different groups of 2 could I put in the front (doesn’t matter who sits on left or right)? | There are 14 people in this room. Three people will become teachers. How many different groups of 3 could it be? |

Manny is going to go to Oxford Casino and try his luck at Blackjack. The way he plays, he has a 45% chance of winning. If he plays 5 hands, find

|  |  |
| --- | --- |
| P(all wins): | P(no wins): |
| P ( at least one win): | P(at least one loss): |

Find the probability that he wins only once?

What is the chance that he wins the first 3 hands, then loses the next two?

How many different ways could he win 3 hands and lose 2 (in any order)?

So what is the chance that he wins 3 out of 5 hands?

Fill in the table:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Wins | 0 | 1 | 2 | 3 | 4 | 5 |
| Probability |  |  |  |  |  |  |

Lets flip 8 coins at a time. Find:

The Expected number of heads:

P(all heads):

P(0 heads):

P(at least 1 even):

Now lets fill in the chart:

|  |  |  |
| --- | --- | --- |
| # of evens | Theoretical (show work) | Experimental |
| 0 |  |  |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |

|  |  |
| --- | --- |
| NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_ | **Probability** |
| **HW 4-8 Binomial Practice** | **DATE: Thursday, May 25, 2017** |

1. In a history class, Brenda and Deqa both take a true false quiz. There are 6 questions. Each question has two possible answers. What is the probability that

1. Brenda will gets a 5 out of 6 on the test if she guesses an answer to each question.
2. Deqa studies and now has a 75% chance of answering each question correctly. What is the change she will get a 5 out of 6 on the test?

2. Hospital records show that of patients suffering from a certain disease, 75% die of it. What is the probability that of 6 randomly selected patients, 4 will recover?

3. In the old days, there was a probability of 0.8 of success in any attempt to make a telephone call. Calculate the probability of having 7 successes in 10 attempts.

4. Approximately 3% of the eggs in a store are cracked. If you buy two dozen eggs, what is the probability that

1. none of your eggs are cracked
2. exactly two of your eggs are cracked

5. The probability that Julio will sink a foul shot is 70%. If he attempts 12 foul shots, what is the probability that

1. he sinks exactly 9 shots
2. he sinks exactly 10 shots
3. he sinks exactly 11 shots
4. he sinks exactly 12 shots
5. he makes at least 9 of them?

**Advanced:**

1. A manufacturer of metal pistons finds that on the average, 12% of his pistons are rejected because they are either oversize or undersize. What is the probability that a batch of 10 pistons will contain

1. no more than 2 rejects?

 (b) at least 2 rejects?

2. In a history class, Brenda is taking a multiple choice quiz. There are 10 questions. Each question has 4 possible answers. What is the probability that she passes (gets 7 or more)?