Probability/Statistics
Chapter 5 Review B

NAME_____

You may us the attached Binomial Probability Table as needed along with the following formulas:

$Mean: \ \mu = \sum xP(x)$ $\quad$ $S\tan dardDeviation: \ \sigma = \sqrt{\sum (x-u)^2 p(x)}$

$Binomial\ Probabability\ Distribution: \ P(r) = C_{n,r} p^r q^{n-r}$ $\quad$ $\mu = np$ $\quad$ $\sigma = \sqrt{npq}$

Which of the following are continuous variables and which are discrete?

1. Number of student tardies during 3rd hour.

2. Number of books in locker.

3. The height of students in class.

Laura works as a volunteer at an emergency hot-line. For the last 80 days she recorded the number of calls per evening. In this table, x is the number of calls received and the frequency is the number of evening calls.

x	0	1	2	3	4	5	6
frequency	7	21	43	25	16	8	3

x	$P(x)$	$xP(x)$	$x-\mu$	$(x-\mu)^2$	$(x-\mu)^2P(x)$
0					
1					
2					
3					
4					
5					
6					

4. Complete the chart.

5. Find the expected number of calls (μ).

6. Find the standard deviation (σ).

In Allen Park, 85% of all students attend Allen Park Public Schools. We want to know what the probability that a random sample 13 out of 15 Allen Park residents attend APPS.

7. What is the value of n?

8. What is the value of p?

9. What is the value of q?

10. What is the value of r?

11. What is the probability that exactly 12 attend APPS?

12. What is the probability that more than 13 attend APPS?

1._____

2._____

3._____

5._____

6._____

7._____

8._____

9._____

10._____

11._____

12._____

A study involving Michigan athletic injuries, found that the largest percent came from competitive cheer at 25%. Assuming that the claim is true, what is the probability that in a day with 4 different types of events:

13. all are competitive cheer injuries

14. none are competitive cheer

15. at least 2 are cheer injuries

16. no more than 3 are cheer injuries

The probability of a high school basketball player making a free throw is .65. Free throws are attempted by 5 players. Let r be the number of players who attempted a free throw. $\mathbf{P(r) = C_{n,r}\, p^r q^{(n-r)}}$

17. List the probability distribution P(r) for r = 0, 1, 2, 3, 4, 5 in a table.

18. Graph this probability distribution using a histogram.

19. Is this graph symmetric or skewed? Explain.

In Ohio, only 65% or motorcyclist where a helmet everyday.

20. What is the expected number of motorcyclists wearing a helmet in a random sample of 125?

21. If the police observed 150 motorcyclists, what is the standard deviation?

13._____

14._____

15._____

16._____

17.

r	P(*r*)
0	
1	
2	
3	
4	
5	

18.

19._____

20._____

21._____