**WK3A3 – Quiz**

1. A bag of colored blocks contains the following assortment of colors: red (6), blue (7), orange (25), purple (17), green (18), and yellow (7).

Construct the probability distribution for x.

1. Classify the following as discrete or continuous random variables.

(A) The number of people who play the state lottery each day

(B) The time required for a modem to dial an internet provider before connecting

(C) The time it takes to run a marathon

(D) The number of fractions between 1 and 2

1. In testing a new drug, researchers found that 5% of all patients using it will have a mild side effect. A random sample of 15 patients using the drug is selected. Find the probability that:

(A) exactly three will have this mild side effect

(B) at least two will have this mild side effect.

1. Find the mean and standard deviation of the following probability distribution:

|  |  |  |  |
| --- | --- | --- | --- |
| x | 1 | 2 | 3 |
| *P*(*x*) | 0.4 | 0.4 | 0.2 |

Please show all of your work.

1. Construct a scatterplot for the (x, y) values below, and answer the following questions. You do NOT need to submit your scatterplot with your answer; however, show all other work. x

|  |  |
| --- | --- |
| x | y |
| 1 | 5 |
| 2 | 9 |
| 3 | 13 |
| 4 | 17 |
| 5 | 21 |

- What would be the slope of this regression line?

- Would the correlation between x and y be positive or negative?

- How would you interpret these data in terms of linear regression?

1. Please answer the following questions regarding the graph below:



- What percentage of the grand total of students are females in the BSN program?

- How would you interpret the relationship between gender and majors in this graph?

- List the percentages of students in each major area as compared to the grand total.

1. How many green elements are required to make this a legitimate probability distribution if there are a total of 50 elements in this sample?

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| x | red | blue | orange | brown | green |
| P(x) | 0.20 | 0.10 | 0.18 | 0.22 |  |