Name: ____[illegible]____________________
[illegible]

Statistical Concepts:
- Probability
- Binomial Probability Distribution

<u>Calculating Binomial Probabilities</u>

- Open a new MINITAB worksheet.

- We are interested in a binomial experiment with 10 trials. First, we will make the probability of a success ¼. Use MINITAB to calculate the probabilities for this distribution. In column C1 enter the word 'success' as the variable name (in the shaded cell above row 1). Now in that same column, enter the numbers zero through ten to represent all possibilities for the number of successes. These numbers will end up in rows 1 through 11 in that first column. In column C2 enter the words 'one fourth' as the variable name. Pull up **Calc > Probability Distributions > Binomial** and select the radio button that corresponds to **Probability**. Enter 10 for the **Number of trials** and enter 0.25 for the **Event probability**. For the **Input column:** select 'success' and for the **Optional storage:** select 'one fourth'. Click the button **OK** and the probabilities will be displayed in the Worksheet.

- Now we will change the probability of a success to ½. In column C3 enter the words 'one half' as the variable name. Use similar steps to that given above in order to calculate the probabilities for this column. The only difference is in **Event probability:** use 0.5.

- Finally, we will change the probability of a success to ¾. In column C4 enter the words 'three fourths' as the variable name. Again, use similar steps to that given above in order to calculate the probabilities for this column. The only difference is in **Event probability:** use 0.75.

<u>Plotting the Binomial Probabilities</u>

1. Create plots for the three binomial distributions above. Select **Graph > Scatter Plot** and **Simple** then for graph 1 set Y equal to 'one fourth' and X to 'success' by clicking on the variable name and using the "select" button below the list of variables. Do this two more times and for graph 2 set Y equal to 'one half' and X to 'success', and for graph 3 set Y equal to 'three fourths' and X to 'success'. Paste those three scatter plots below.