

Put all of your results (charts, SPSS output, answers to questions) into a single Word document. You do not need to turn this in.

Problem #1: Excel

Every month your parents probably receive a mortgage statement that shows their loan balance and some specifics about the loan like the monthly payment and monthly interest rate. They are not quite sure how many months they have left before the loan is paid off. You can develop a table that shows them the exact month that their loan is paid off. The ending balance might be a few cents (not exactly zero) but it should only be pennies off. Create an amortization table using the following information:

Loan Balance: 147,964.65

Monthly Payment: 1,580.17

Interest Rate: 6.5%

Do you have any way to check your results?

Problem #2: Excel

Using the World Population data from here: <http://exploringdata.cqu.edu.au/datasets.htm> (Click on the red dot)

Do an exponential regression on “World Population 1” data. Be sure to label the chart appropriately. In the Word document, write the equation using the Equation editor. Also, rewrite the equation so that you can find out at what time the world will have a certain population.

Problem #3: SPSS

Consider the following two cold medicines tested for acetaminophen. Using SPSS, test the claim that the mean amount of acetaminophen is the same for both medicines. What is your conclusion? Explain. In particular, state your NULL Hypothesis, perform the appropriate Hypothesis test (which test will you use and why?), state your conclusion.

Brand A	472	487	506	512	489	503	511	501	495	504	494	462
Brand B	562	512	523	528	554	513	516	510	524	510	524	508

Problem #4: SPSS & Excel

The NCAA is considering ways of speeding up the end of college basketball games. In a recent NCAA tournament, the last two minutes of 60 games took the following times to complete (in seconds):

756	587	929	871	378	503	564	1128	693	748
448	670	1023	335	540	853	852	495	666	474
443	325	514	404	820	915	793	778	627	483
861	337	292	1070	625	457	676	494	420	862
991	615	609	723	794	447	704	396	235	552

626 688 506 700 240 363 860 670 396 345

Note: Data was reported in USA Today

- a) In both Excel and SPSS, find the mean, median, mode, standard deviation, minimum, and maximum values for the given data.
- b) Create a histogram of the given data.
- c) Do these times indicate that something should be done to speed up the last two minutes of the game? Support your answer as best you can.

Problem #5: SPSS

Open the file Oscars.xls in SPSS. This file contains the year, actresses name, movie name, and actress's age for each Best Actress Oscar winner from 1928-1996. The file does not contain variable names!

Data from:

http://exploringdata.cqu.edu.au/ws_oscr.htm

Once you open this file in SPSS, rename the variables and set the type and measure correctly. What is the mean, mode, and median age for Oscar winners?

Is the mean age of Oscar winners different for those actresses that won before 1960 or 1960 and after? Which hypothesis test will you use and why? What is your NULL hypothesis? What is your conclusion?

Build a Pie chart that has a wedge for each age and where the size of the wedge is the number of actresses of that age that won an Oscar.

Problem #6: Excel

Create a new Excel Spreadsheet, name this worksheet **Box**. Most delivery companies charge a different price for different size boxes. ForestGroveShipping charges \$10.00 to deliver a small box and \$20.00 to deliver a large box. To determine if your box is small you need to add the length, width, and height of your box. If this total is less than 90 inches, the box is small. If it is 90 inches or more, the box is considered to be large.

You need to build a worksheet that will allow the user to input the length, width, and height of a box and have the cost to ship that box displayed in cell A4. Be sure to clearly label the input cells and the output cell. The output cell should either display \$10.00 or \$20.00.

*Nothing from this question goes into the Word document

Excel Functions to know: nper, pmt, ceiling, round, int, if, mean, average, countif, median, maximum, minimum