

STAT 269 - Introductory Statistics

Minitab Homework 4 (Unit 2 Part 2)

- For this group you should be working with your permanent Minitab Group established by email on Minitab Homework 3. Get together with those friends (if you were in a group), and then begin the rest of the appointment.
- Open Minitab.
- Under “Graph”, select “Probability Distribution Plot...” then click “View Probability” and OK.
- Make sure that under the “Distribution” drop down menu, Normal is selected.
- For each of the following problems, enter the mean and variance for each example in the appropriate boxes. Do not leave the defaults! Then click the “Shaded Area” tab. Each question below gives a probability or X value(s). Check the appropriate dot for which you have (Minitab will give you the other). Click the appropriate direction (right for greater than, left for less than, outside two values, or between two values), and enter the probability or X value(s) you have. Once everything is entered, click OK.
- Questions to answer:
 1. Find the probability that a cell phone will last between 8 and 12 hours given that the charge has an average life of 10 hours with a standard deviation of 1.5 hours and the distribution is normal.
 2. What is the probability that a random car would get less than 20 mpg given that the average car of this type gets 27 mpg with a standard deviation of 3 mpg and the distribution is normal?
 3. Find the cutoff for acceptance into a school that admits only those who exceed the 90th percentile on an exam with a 550 point average, a standard deviation of 100 points, and the distribution is normal.
 4. Suppose that the mean maximum oxygen uptake for all patients is normally distributed with mean 24.1 and the standard deviation 6.30. What is the probability that a random patient would have a maximum oxygen uptake of at least 20?
- Adjust the title of each graph to reflect the problem number above. (See Minitab Homework 2 for instructions on how to edit the title if you forget how to do this.)
- Copy each of the graphs into Word two or three per page. Save the Word file with the name “Minitab4”. Be sure to put them in the correct order to make my review of your work less likely to give an incorrect grade.
- Now, to see how to get more accuracy, we will consider again question 2 from above. Click “Calc”, “Probability Distributions”, “Normal”. Make sure “Cumulative probability” is chosen, then change the “Mean” and “Standard deviation” values to the correct numbers. Click to select “Input constant”, and enter 20 in the box next to this. (Leave the “Optional storage” box blank.) Click OK. You should see a much more accurate answer to 2. now in the Session window.
- Save the Minitab project as “Minitab4”. This will automatically save with a .MPJ extension (Minitab4.MPJ). Please do not use your own naming convention. Save the file(s) as asked.
- In Canvas, go to the Minitab 4 assignment and click to submit the assignment and upload the two files that you just saved. You **must** upload **both** files for full credit.