

Test 3

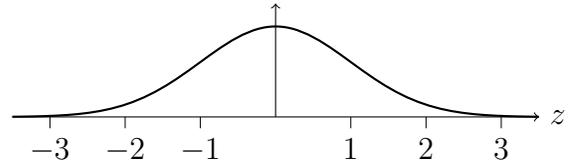
Show all your work

Name: _____
 Number: _____
 Signature: _____
 Score: ____/43

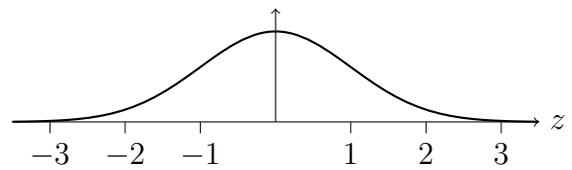
A TI-83/84 calculator allowed.

Problem 1: Evaluate each of the following probabilities from a standard normal probability distribution using either the tables or your graphing calculator. In either case, label the relevant value(s) on the z -axis and shade corresponding area. State calculator command and entries if you use the calculator. Round to 4 decimal places.

a. $P(Z > 0.76) =$



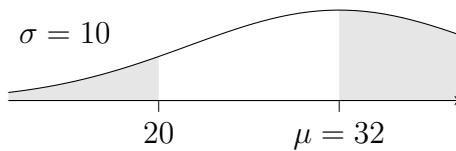
b. $P(-1.43 \leq Z < 0.35) =$



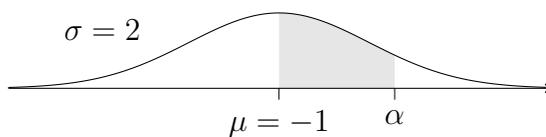
Score: /4

Problem 2: For the normal probability distributions with their corresponding mean and standard deviation, find the value of the variable indicated in each. State calculator command and entries for each part. Round to 4 decimal places.

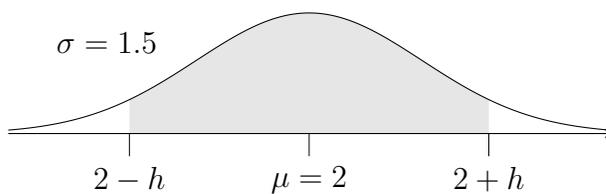
a. Find the area of the shaded region.



b. Find α if the shaded region has area 0.4000.

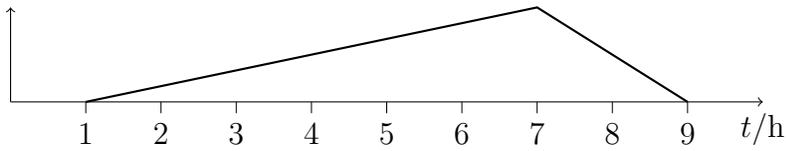


c. Find h if the shaded region has area 0.8888.



Score: /6

Problem 3: Suppose that the distribution of the hours of sleep per night for university students during final exam period is given by the graph shown. What proportion of university students get at least 7 hours of sleep per night during the finals?



Score: /4

Problem 4: The distribution of IQ scores in Burnaby's Gifted Program is a nonstandard normal distribution with a mean of 120 and a standard deviation of 13. Answer the following.

- a. Find the first quartile Q_1 , which is the IQ score separating the bottom 25% from the top 75%.

- b. What percentage of students in the Gifted Program has an IQ greater than 135?

- c. Find the probability that a randomly selected student from the program has an IQ less than 100.

- d. Eighty percent of the students in the program has an IQ between 120 plus or minus how many IQ points?

- e. Find the IQ score separating the top 1% from the others.

- f. In a group of 25 students in Parkcrest Elementary's Gifted Program, what is the probability that the average IQ is between 120 and 135?

Score: /12

