Assignment - Chapter 8

Complete the following problems related to the chapter 8. Upload your work as a single PDF file before deadline.

1. Assume that the lengths of pregnancy for humans is approximately Normally distributed, with a mean of 267 days and a standard deviation of 10 days. Use the information and $z-$table to answer the following questions. To find the $z-$table go to www.z-table.com

   (a) What percentage of pregnancies are between 257 and 277 days?

   (b) What percentage of pregnancies are between 247 and 277 days?

   (c) What percentage of pregnancies are between 237 and 297 days?

   (d) What percentage of pregnancies are between 267 and 277 days?

   (e) What percentage of pregnancies are between 257 and 287 days?

   (f) What percentage of pregnancies are less than 267 days?

   (g) What percentage of pregnancies are greater than 267 days?

   (h) What percentage of pregnancies are less than 297 days?

   (i) What percentage of pregnancies are greater than 297 days?

   (j) What percentage of pregnancies are less than 237 days?

   (k) What percentage of pregnancies are greater than 237 days?

   (l) What percentage of pregnancies are greater than 277 days?

2. Whales have one of the longest gestation periods of any mammal. According to whale-facts.org, the mean gestation period for a whale is 14 months. Assume the distribution of gestation periods is Normal with a standard deviation of 1.2 months.

   (a) Find the $z-$score associated with a gestational period of 12.8 months.

   (b) What percentage of whale pregnancies will have a gestation period between 12.8 months and 14 months?

   (c) Would it be unusual for a whale to have a gestation period of 18 months? Why or why not?

   (d) Interpret the meaning of z-scores of -0.86 and 1.56 in this context.