1. For one of your STAT 107 Business Statistics assignments, you decide to do a comparison of textbook prices. You collect the following data regarding the prices for selected course textbooks available at the Framingham State University Bookstore and a popular online bookstore. When the manager of the bookstore finds out about the information that you have collected (s)he asks you to determine the mean and standard deviation for various groups of these textbooks.

Type	College Bookstore	Online Bookstore
Chemistry	93	94
Classic Tale	10	8
English Anthology	47	49
Calculus	76	94
Biology	87	81
Statistics	8	6
Dictionary	24	17
Style Manual	13	11
Art History	66	46

(a) Determine the price that corresponds to the 85th percentile for the (i) *online bookstore.* (ii) *college bookstore.* What is the meaning of the 85th percentile in this context?

(b) Determine the price that corresponds to the 50th percentile for the (i) *online bookstore.* (ii) *college bookstore.* What is the meaning of the 50th percentile in this context?

(c) Determine the percentile rank for the price of the Calculus textbook for the (i) *online bookstore.* (ii) *college bookstore.*

(d) Determine the percentile rank for the price of the Art History textbook for the (i) *online bookstore.* (ii) *college bookstore.*

2. For your summer internship with *the Zoological Society of San Diego*, you are asked to analyze data for the twenty (20) mammals being studied by the Society. For your analysis, you obtain information for the gestation period, in days, the life span, in years, determining both the average life span and the maximum life span, and the average speed, in miles per hour, for these mammals as well as if the mammals are considered to be wild or considered to be predators.

Mammal	Gestation Period	Average Life Span	Maximum Life Span	Average Speed	Wild	Predator
Rabbit	31	5	13	35	No	No
Chipmunk	31	6	8	10	Yes	No
Kangaroo	36	7	24	40	Yes	No
Deer	201	8	20	30	Yes	No
Pig	112	10	27	11	No	No
Squirrel	44	10	23	12	Yes	No
Giraffe	425	10	34	32	Yes	No
Donkey	365	12	47	40	No	No
Zebra	365	15	50	40	Yes	No
Elk	250	15	27	45	Yes	No
Horse	330	20	50	48	No	No
Elephant	660	35	70	25	Yes	No
Hippopotamus	238	41	54	20	Yes	No
Opossum	13	1	5	7	Yes	Yes
Fox	52	7	14	42	Yes	Yes
Cat	63	12	28	30	No	Yes
Dog	61	12	20	39	No	Yes
Cheetah	93	14	20	70	Yes	Yes
Lion	100	15	30	50	Yes	Yes
Grizzly bear	225	25	50	30	Yes	Yes

(a) What is the 40th percentile for the gestation period? What is the meaning of the 40th percentile in this context?

(b) What is the 65th percentile for the maximum life span? What is the meaning of the 65th percentile in this context?

(c) What is the 47th percentile for the average life span? What is the meaning of the 47th percentile in this context?

(d) What is the percentile rank for the (i) gestation period, (ii) maximum life span, (iii) average life span, and (iv) average speed *for the Zebra*?