Elementary Statistics – Homework No. 2

Issued: Thursday, 18 March 2021 **Submission deadline: Thursday, 25 March 2021**

Question 1 (4 points)
The data shown are the total compensation (in millions of dollars) for the 47 top-paid CEOs for a recent year.

16.5	16.8	16.9	16.9	17.0	17.2	17.2	17.3	17.4	17.5	18.0	19.1	19.1	19.3
19.7	19.8	20.0	20.1	20.4	21.4	21.6	22.9	23.2	23.7	24.0	24.0	24.1	24.3
25.0	25.1	25.2	25.4	25.5	25.9	26.8	28.6	29.1	31.4	31.7	31.7	35.2	35.4
36.8	37.6	38.5	41.7	47.7									

(a) Find the mean.
(b) Find the median.
(c) Find the mode.
(d) Find the midrange.

NOTE: Rounding rule for the mean: round to one more decimal place than the data.

Question 2 (4 points)

The increases (in cents) in cigarette taxes for 15 states in a 6−month period are

60, 32, 12, 30, 20, 31, 40, 34, 51, 40, 42, 50, 45, 70, 18
Source: Federation of Tax Administrators.

Assume the data represent samples and find
(a) the range,
(b) the variance and the standard deviation.
(c) Use the range rule of thumb to estimate the standard deviation.
(d) Compare the estimate to the actual standard deviation.

Question 3 (5 points)
Identify the five-number summary and find the interquartile range for the following data. Round the answers to one decimal place.

257, 136, 381, 279, 466, 147, 186, 275, 349, 127, 475, 369, 274

Question 4 (3 points)
A pizza restaurant sold 29 cheese pizzas and 23 pizzas with one or more toppings. 14 of cheese pizzas were eaten at work, and 11 of the pizzas with one of more toppings were eaten at work. Choose pizza at random.
(e) Find the probability that it was a cheese pizza eaten at work.
(f) Find the probability that it was a pizza with one or more toppings, and it was not eaten at work.
(g) Find the probability that it was a cheese pizza, or it was a pizza eaten at work.

Note: Express your answers as fractions or decimals rounded to 3 decimal places.

(turn over)

Question 5 (4 points)
In addition to being grouped into four group types, human blood is grouped by its Rhesus (Rh) factor. Consider the figures below that show the distributions of these groups for Americans.

	O	A	B	AB
Rh+	37%	34%	10%	4%
Rh−	6%	6%	2%	1%

Choose one American at random. Find the following probabilities.

(a) A person had type of A- blood.
(b) A person has type AB blood, given that the person is Rh-.
(c) A person has A- or B- blood.
(d) A person has Rh-, given that the person has type O blood.

Note: Express your answers as decimals rounded to 3 decimal places.