Hybrid 3 - STATISTICS

In Exercises below, use the following data.

An airline's records showed that the percent of on-time flights each day for a 20-day period was as follows:

72, 75, 76, 70, 77, 73, 80, 75, 82, 85, 77, 78, 74, 86, 72, 77, 67, 78, 69, 80

    3.   Determine the mean.

    5.   Construct a frequency distribution table with five classes and a lowest class limit of 67.

    7.   Draw a histogram for the data in Exercise 5.

In Exercises 11–16, use the following data: An important property of oil is its coefficient of viscosity, which gives a measure of how well it flows. In order to determine the viscosity of a certain motor oil, a refinery took samples from 12 different storage tanks and tested them at 50°C. The results (in pascal-seconds) were 0.24, 0.28, 0.29, 0.26, 0.27, 0.26, 0.25, 0.27, 0.28, 0.26, 0.26, 0.25.

    11.   Find the mean.

    13.   Find the standard deviation.

In Exercises 31–36, use the following data: Police radar on a city street recorded the speeds of 110 cars in a 65 km/h zone. The following table shows the class marks of the speeds recorded and the number of cars in each class.

Speed (km/h)	40	45	50	55	60	65	70	75	80	85
No. cars	3	4	4	5	8	22	48	10	4	2

    31.   Find the mean.

    33.   Find the standard deviation.

In Exercises 47–50, use the following data: After analysing data for a long period of time, it was determined that samples of 500 readings of an organic pollutant for an area are distributed normally. For this pollutant, $\mu = 2.20\ \mu g/m^3$ and $\sigma = 0.50\ \mu g/m^3$.

    47.   In a sample, how many readings are expected to be between 1.50 $\mu g/m^3$ and 2.50 $\mu g/m^3$?

    49.   In a sample, how many readings are expected to be above 1.00 mg/m³?

51. In a certain experiment, the resistance R of a certain resistor was measured as a function of the temperature T. The data found are shown in the following table. Find the least-squares line, expressing R as a function of T.
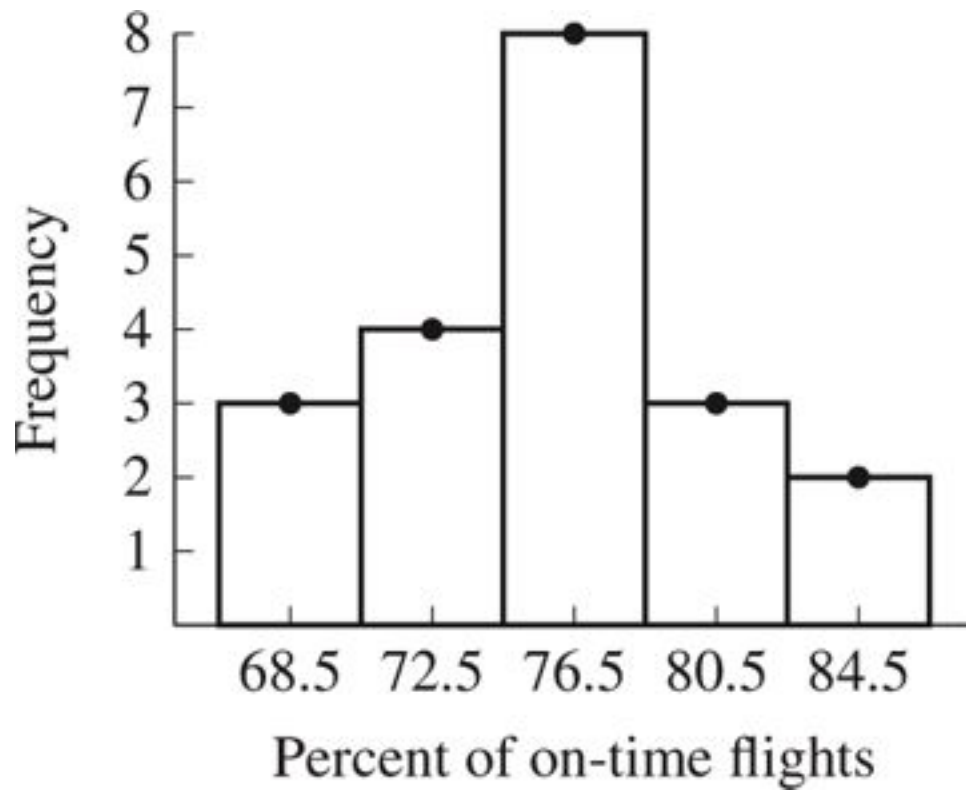
T (°c)	0.0	20.0	40.0	60.0	80.0	100
R (Ω)	25.0	26.8	28.9	31.2	32.8	34.7

ANSWERS

3. 76.2

5.

class	f
67–70	3
71–74	4
75–78	8
79–82	3
83–96	2

7.

9.

Class	f
<71	3
<75	7
<79	15
<83	18
<87	20

11. 0.264 Pa · s

13. 0.014 Pa · s

31. 66.2 km/h

33. 9.0 km/h

47. 322

49. 495

51. $R = 0.0983T + 25.0$