TUGAS STATISTIK DAN PROBABILITAS

DIKUMPUL TANGGAL 29 OKTOBER 2013

1 The masses of 50 castings were measured. The results in kilograms were as follows:

4·6	4·7	4·5	4·6	4·7	4·4	4·8	4·3	4·2	4·8
4·7	4·5	4·7	4·4	4·5	4·5	4·6	4·4	4·6	4·6
4·8	4·3	4·8	4·5	4·5	4·6	4·6	4·7	4·6	4·7
4·4	4·6	4·5	4·4	4·3	4·7	4·7	4·6	4·6	4·8
4·9	4·4	4·5	4·7	4·4	4·5	4·9	4·7	4·5	4·6

(a) Arrange the data in 8 equal classes between 4·2 and 4·9 mm.

(b) Determine the frequency distribution.

(c) Draw the frequency histogram.

2 The diameters of 75 rollers gave the following frequency distribution:

Diameter x (mm)	8·82–8·86	8·87–8·91	8·92–8·96	8·97–9·01
Frequency f	1	8	16	18

Diameter x (mm)	9·02–9·06	9·07–9·11	9·12–9·16	9·17–9·21
Frequency f	15	10	5	2

(a) For each class, calculate (i) the central value, (ii) the relative frequency.

(b) Draw the relative frequency histogram.

(c) State (i) the lower boundary of the third class, (ii) the upper boundary of the sixth class, (iii) the class interval.

3 The thicknesses of 40 samples of steel plate were measured:

Thickness x (mm)	9·60–9·80	9·90–10·1	10·2–10·4	10·5–10·7
Frequency f	1	4	10	11

Thickness x (mm)	10·8–11·0	11·1–11·3	11·4–11·6
Frequency f	7	4	3

Using coding procedure, calculate:

(a) the mean

(b) the standard deviation

(c) the mode

(d) the median of the set of values given.

4 The lengths of 50 copper plugs gave the following frequency distribution:

Length x (mm)	14·0–14·2	14·3–14·5	14·6–14·8	14·9–15·1
Frequency f	2	4	9	15

Length x (mm)	15·2–15·4	15·5–15·7	15·8–16·00
Frequency f	11	6	3

(a) Calculate the mean and the standard deviation.

(b) For a full batch of 2400 plugs, calculate (i) the limits between which all the lengths are likely to occur, (ii) the number of plugs with lengths greater than 15·09 mm.