

Business Decision Making Sample Exam Paper Set 2 (Final Answers)

1.
 - a.
 - (i) Quantitative, discrete
 - (ii) Qualitative
 - (iii) Quantitative, continuous
 - (iv) Qualitative
 - (v) Ratio
 - (vi) Ordinal
 - (vii) Nominal
 - (viii) Ratio
 - b.
 - (i) 0.075
 - (ii) 0.086
 - (iii) $\mu = 0.5; \sigma = 0.689$

2.
 - a. List of probability sampling techniques commonly used (any 3):
 - Random sampling
 - Systematic sampling
 - Stratified sampling
 - Cluster sampling
 Description – refer to slides (Chap 1)
 - b.
 - (i) Dependent variable – monthly rent
Independent variable – size of house
 - (ii) Line of best fit: $y' = -0.004 + 0.052x$
 - (iii) \$1,556

3.
 - a.
 - (i) MM, MM', M'M, M'M'
 - (ii) 0.75
 - (iii) 0.25
 - b.
 - (i) 0.28
 - (ii) 0.54
 - (iii) 0.82
 - c.

H₁: $\mu < 400$
 CV: $z = -1.65$
 Test value: $z = -2.5$
 Decision: reject H₀.

4. a. (i) Recommend a class width of 4.
(ii)

Class Limits	Class Boundaries	Class Midpoints	Freq	Relative Freq	Cum Freq	Cum Rel Freq
10 - 13	9.5 - 13.5	11.5	4	0.13	4	0.13
14 - 17	13.5 - 17.5	15.5	7	0.23	11	0.37
18 - 21	17.5 - 21.5	19.5	9	0.30	20	0.67
22 - 25	21.5 - 25.5	23.5	6	0.20	26	0.87
26 - 29	25.5 - 29.5	27.5	4	0.13	30	1.00
Total			30	~1.00		

- (iii) The distribution is symmetrical

- b. (i) linear, positive and strong.
(ii) $r^2 = 0.949$
94.9% of the variation in the monthly rent can be explained by the variation in the size of the house.

5. a. H_1 : The pay is dependent of gender
CV: $\chi^2 = 9.210$
Test value: $\chi^2 = 14.626$
Decision: reject H_0 .

- b. (i) 0.1023
(ii) 0.0062

6. a. (i) 0.24
(ii) 0.16
(iii) 0.84
(iv) 0.526
(v) not mutually exclusive
- b. H_1 : $\mu > 10$
CV: $t = 1.328$
Test value: $t = 1.49$
Decision: reject H_0 .

7. a. (i) 88.5
(ii) 88
(iii) 14
(iv) 5.36
- b. (i) $45.06 < \mu < 50.94$ hours
(ii) We are 95% confident that the population mean time taken to mail the ordered products to the customers is somewhere between 45.1 and 50.9 hours.
(iii) 139