

2024 Mock Exam (Units 3&4)

Multiple choice question book

General Mathematics

Paper 1

General instruction

- Work in this book will not be marked.

Section 1

QUESTION 1

A linear relationship with a Pearson's correlation coefficient of $r = 0.92$ is best described as:

- (A) Strong positive
- (B) Strong Negative
- (C) Weak positive
- (D) Weak negative

QUESTION 2

The following table describes the age of adults and their residency status.

Age	Live with Parents	Rent Home	Own Home	Total
18-21	12	6	2	20
22-25	14	10	6	30
26-30	5	25	20	50

The percentage of adults aged 26-30 that still live with their parents is:

- (A) 10%
- (B) 5%
- (C) 31%
- (D) 25%

QUESTION 3

Which of the following statements best describes bivariate data?

- (A) Bivariate data analysis only applies to numerical data.
- (B) Correlation in bivariate data always implies causation between two variables.
- (C) Bivariate data involves the analysis of two variables to determine the empirical relationship between them.
- (D) Bivariate data can't show relationships between variables. It only describes singular data points.

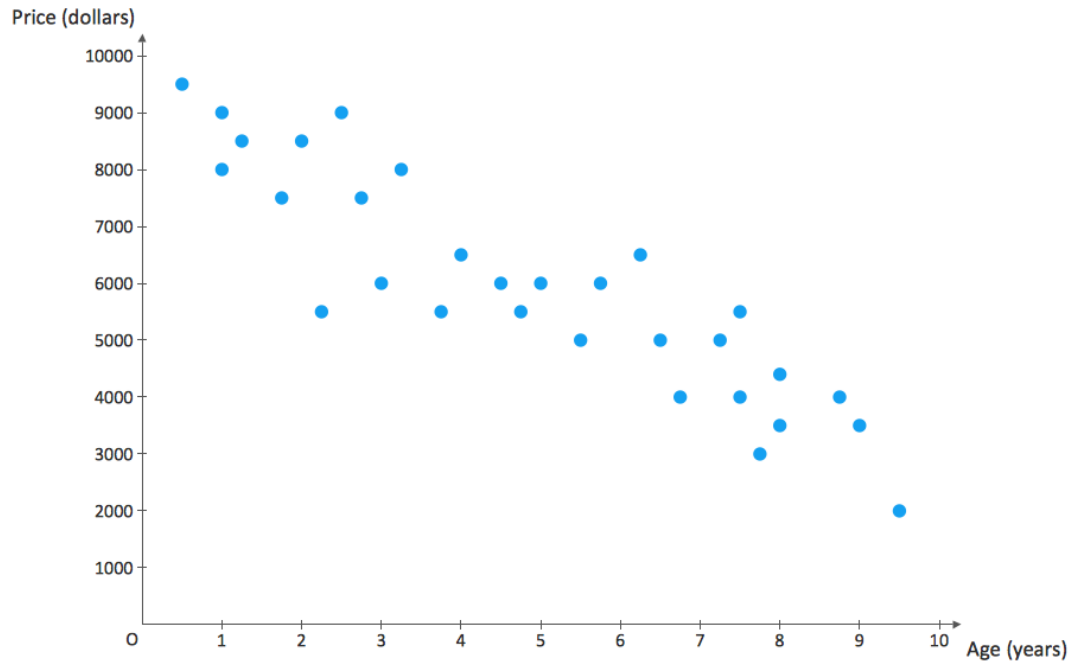
QUESTION 4

It is claimed that as the temperature increases, the sales of cold drinks increase. Which of the following statements is true:

- (A) Temperature is the response variable.
- (B) Temperature is the explanatory variable.
- (C) Cold drinks are the explanatory variable.
- (D) Neither temperature or cold drinks are the explanatory variable.

QUESTION 5

The following graph illustrates the cost and age of ride-on lawnmowers.



The relationship is best described as:

- (A) A moderate, positive relationship.
- (B) A strong, negative relationship.
- (C) A weak, negative relationship.
- (D) A non-linear relationship.

QUESTION 6

A coefficient of determination is $r^2 = 0.88$. The correlation coefficient is:

- (A) -0.94
- (B) 0.74
- (C) 0.88
- (D) 0.44

QUESTION 7

A least-squares regression equation is $y = 17.44 + 0.96x$. Using this equation, the value of x , given $y = 120$ is closest to:

- (A) 133
- (B) 107
- (C) 125
- (D) 120

QUESTION 8

A reducing bank loan with an initial amount of \$5000 is modelled by $A_{n+1} = \left(1 + \frac{0.04}{12}\right)A_n - 180$. At the end of 4 months, the remaining loan value is closest to:

- (A) \$4280
- (B) \$4672
- (C) \$4344
- (D) \$4335

QUESTION 9

Two locations are separated by an angular distance of 15° along a greater circle. The distance, in kilometres, between the two locations is:

- (A) 1611
- (B) 1668
- (C) 1775
- (D) 1404

QUESTION 10

A QANTAS credit card has interest rates of 19.95% per annum, with monthly compounding periods. The effective interest rate is closest to:

- (A) 21.88%
- (B) 20.75%
- (C) 19.95%
- (D) 22.42%

QUESTION 11

The time difference in standard time between location A ($10^{\circ}S, 45^{\circ}E$) and location B ($5^{\circ}N, 15^{\circ}W$) is:

- (A) 3 hours
- (B) 2 hours
- (C) 4 hours
- (D) 5 hours

QUESTION 12

The coordinates of a location are ($40^{\circ}S, 120^{\circ}W$). The standard time at this point would be:

- (A) GMT +4
- (B) GMT -4
- (C) GMT +8
- (D) GMT -8

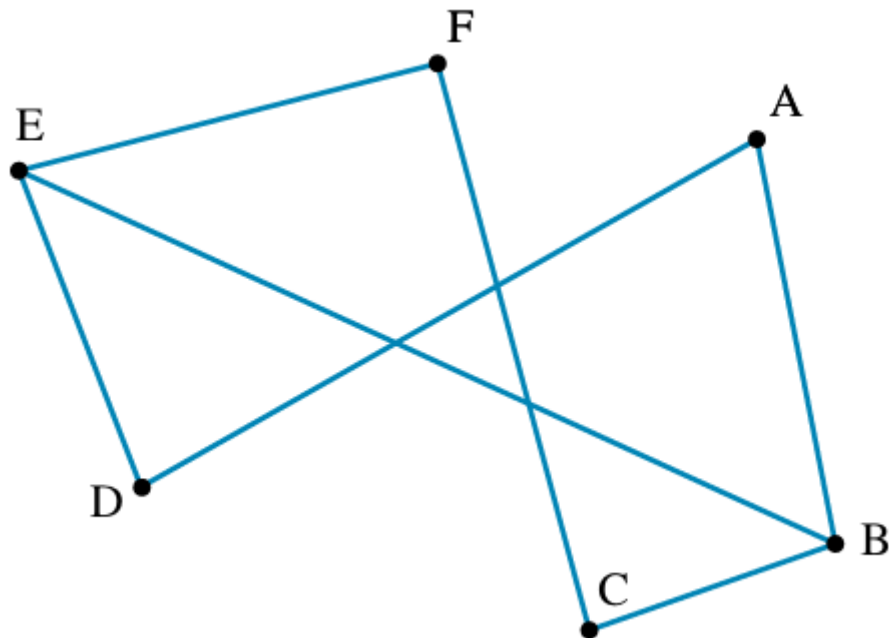
QUESTION 13

A planar graph has 14 vertices and 22 edges. The number of faces on the graph are:

- (A) 7
- (B) 13
- (C) 8
- (D) 10

QUESTION 14

Consider the following graph when completing the question.



Which of the following best describes an open walk?

- (A) ABC
- (B) ABCFEBA
- (C) ABA
- (D) ADEBA

QUESTION 15

Annual sales for a potato crisp company in 2022 are summarised in the table below:

Year	Q1	Q2	Q3	Q4
Sales	\$36720	\$38,160	\$36,000	b
Index	1.02	a	1.00	0.92

- (A) The values of a and b are: $a = 0.98, b = \$37,500$
- (B) The values of a and b are: $a = 1.06, b = \$33,120$
- (C) The values of a and b are: $a = 0.98, b = \$36,180$
- (D) The values of a and b are: $a = 1.06, b = \$34,180$

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