D

Free Exam
for 2006-15 VCE study design

Engage Education Foundation

Units 3 and 4 Further Maths: Exam 1

Practice Exam Question and Answer Booklet

Duration: 15 minutes reading time, 1 hour 30 minutes writing time

Structure of book:

Section	Number of questions	Number of questions to be answered	Number of Modules	Number of modules to be answered	Number of marks
A	13	13			13
B	54	27	6	3	27
		Total			40

- Students are permitted to bring into the examination room: pens, pencils, highlighters, erasers and rulers.
- Students are not permitted to bring into the examination room: blank sheets of paper and/or white out liquid/tape.
- No calculator is allowed in this examination.

Materials supplied:

- This question and answer booklet of 32 pages.

Instructions:

- You must complete all questions of the examination.
- Write all your answers in the spaces provided in this booklet.

Section A – Multiple-choice questions

Instructions

Answer all questions by circling your choice.
Choose the response that is correct or that best answers the question.
A correct answer scores 1, an incorrect answer scores 0.
Marks will not be deducted for incorrect answers.
No marks will be given if more than one answer is completed for any question.

Core: Data Analysis

The following information relates to question 1 and 2:

The table below shows the time 10 students arrived to school and their gender.

Gender	Time (AM)
Male	9.01
Female	8.55
Male	9.05
Male	9.06
Female	8.30
Male	8.46
Female	9.20
Male	8.50
Female	8.57
Male	9.05

Question 1
What is range of arrival times (in minutes)?

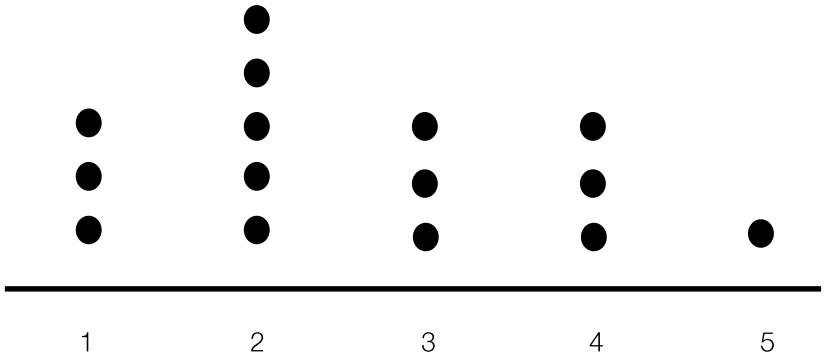
A. 90
B. 50
C. 60
D. 10
E. 30

Question 2
What percentage of males arrived after 9AM?

A. 40%
B. 55%
C. 67%
D. 80%
E. 100%

The following information relates to questions 3, 4 and 5:

The dot plot below shows the distribution of the number of children in each of the 15 houses on Sesame Street.



Question 3
What is the mode of the distribution?

A. 1
B. 2
C. 3
D. 4
E. 5

Question 4
The mean of the distribution is closest to:

A. 1
B. 2
C. 3
D. 4
E. 5

Question 5
The standard deviation of the distribution is closest to:

A. 2.60
B. 1.20
C. 1.24
D. 1
E. 2

The following information relates to questions 6 and 7:

Elmo, Bernie, Oscar, BB, and CM competed in the 200m sprint. The mean time was 31.6 seconds and the standard deviation was 4.1.

Question 6
If Elmo finished with a time of 32 seconds, what is his z-score?

A. -0.098
B. 0.098
C. 0.859
D. -0.859
E. 0.883

Question 7
The following table shows the z-scores of the other competitors.

Name	z-score
Bernie	1.07
Oscar	0.83
BB	-1.61
CM	-0.15

Who won the race?

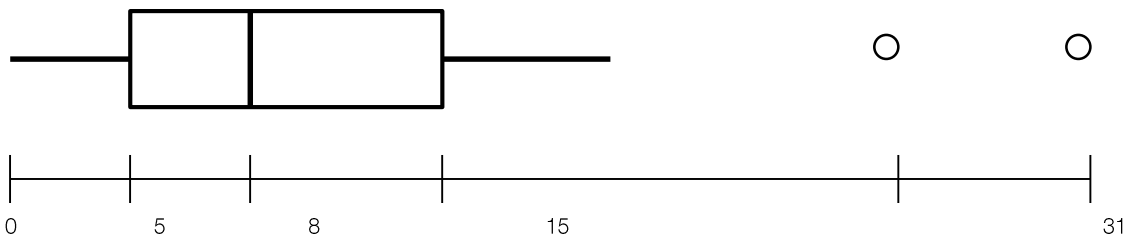
A. Elmo
B. Bernie
C. Oscar
D. BB
E. CM

Question 8
The mean weight of babies born at Seattle Grace in May is 3.3kg, with a standard deviation of 800g. What percentage of babies weighed between 1.7 and 4.1kg?

A. 68%
B. 96%
C. 82%
D. 54%
E. 32%

The following information related to questions 9, 10 and 11:

The following box plot shows the distribution, in days, of the amount of time that 79 girls waited before watching the new Twilight movie.



Question 9
The distribution can be best described as:

A. symmetrical
B. positively skewed with outliers
C. negatively skewed with outliers
D. positively skewed
E. negatively skewed

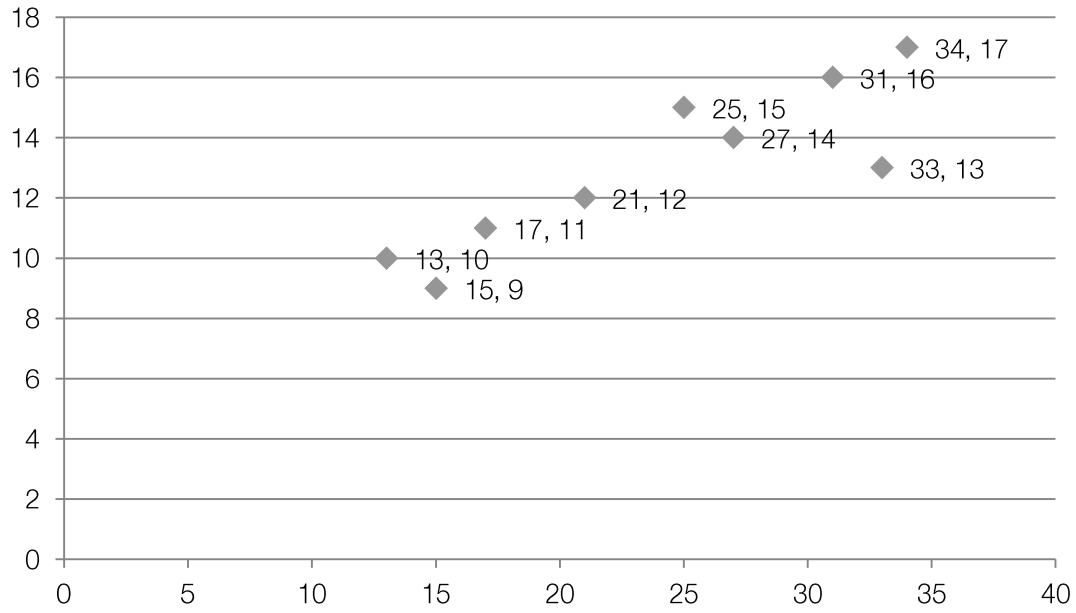
Question 10
The number of people who waited more 15 days is closest to:

A. 20
B. 25
C. 15
D. 75
E. 18

Question 11
Which of the following statements about the median is correct?

A. it is larger than the mean
B. it is smaller than the mean
C. it is equal to the mean
D. it is half the range
E. it is equal to the interquartile range

The following information relates to questions 12 and 13:



Question 12

If a three median line were fitted to the above graph, what would be the slope of the line?

A. 3
B. 0.33
C. 0.4
D. 0.25
E. 4

Question 13

The point (34,18) was accidently plotted as (34,17). If the point was plotted correctly, what difference would it make to the slope of the three median line?

A. no change
B. increase by 1
C. decrease by 1
D. increase by more than 1
E. increase by less than 1

Section B

Instructions

Select three modules and answer all questions within the modules by circling your choice.
Choose the response that is correct or that best answers the question.
A correct answer scores 1, an incorrect answer scores 0.
Marks will not be deducted for incorrect answers.
No marks will be given if more than one answer is completed for any question.

Module 1: Number patterns

Question 1

An arithmetic sequence has first term 6 and fifth term -26. The third term of the sequence is:

A. 10
B. -12
C. 20
D. -10
E. 12

Question 2

The first four terms of a sequence are 5, 9, 21 and 49. The difference equation for the sequence could be:

A. $t_{n+1} = t_n + 4, t_1 = 5$
B. $t_{n+1} = 2t_n - 1, t_1 = 5$
C. $t_{n+2} = t_n + 2t_{n+1} - 2, t_1 = 5$ and $t_2 = 9$
D. $t_{n+2} = t_n + t_{n+1} + 5, t_1 = 5$ and $t_2 = 9$
E. $t_{n+2} = 2t_n + t_{n+1}, t_1 = 5$ and $t_2 = 9$

Question 3

The sum of the first four terms of a geometric series is 5740 with the first term being 7. The common ratio is:

A. 9
B. 8
C. 14
D. 10
E. 2

Question 4

The number of trees in a rainforest each year is found to follow a difference equation $t_{n+1} = 0.65 \times t_n + 45$. This tells us that each year:

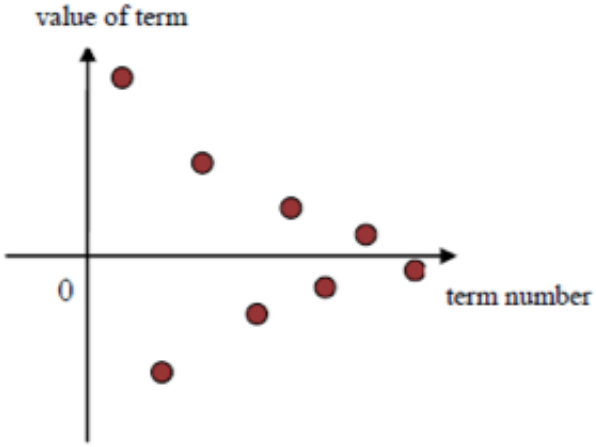
A. 45 trees are cut down.
B. 65% of trees are cut down and then 45 are planted.
C. 45 trees are planted and then 35% are cut down.
D. 45 trees are planted and then 65% are cut down.
E. 35% of trees are cut down and then 45 are planted.

Question 5

A geometric sequence follows the rule $t_n = 4.5 \times 3^{n-1}$ where $n \geq 1$. Another arithmetic sequence has the first three terms 6, 977 and 1948. The smallest positive term that is common to both sequences has the value:

A. 6803
B. 5832
C. 8634
D. 3890
E. 5328

Question 6



The graph above shows consecutive terms of a sequence.

The sequence could be:

A. arithmetic with common difference d, where $d > 0$
B. arithmetic with common difference d, where $d < 0$
C. geometric with common ratio r, where $r < -1$
D. geometric with common ratio r, where $r > 1$
E. geometric with common ratio r, where $-1 < r < 0$

The following information relates to questions 7 and 8:

A motorcyclist covers a distance of 30 km during her first ride. She increases this distance by 7 km every successive ride from that point, so that during her second ride she covers 37 km.

Question 7

What distance will she cover during her 42^{th} ride?

A. 435
B. 324
C. 317
D. 296
E. 310

Question 8

The total distance the motorcyclist covers after her 34^{th} trip is closest to:

A. 5215
B. 5337
C. 4828
D. 4686
E. 4947

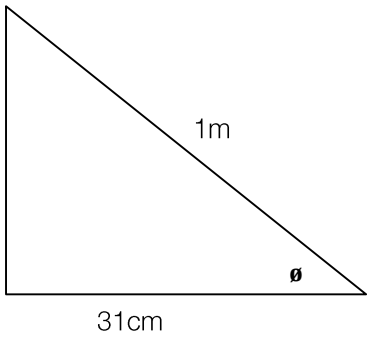
Question 9

The second and third terms of a geometric sequence are 67.5 and 50.625 respectively. The infinite sum of the sequence is closest to:

A. 569
B. 480
C. 188
D. 360
E. 328

Module 2: Geometry and Trigonometry

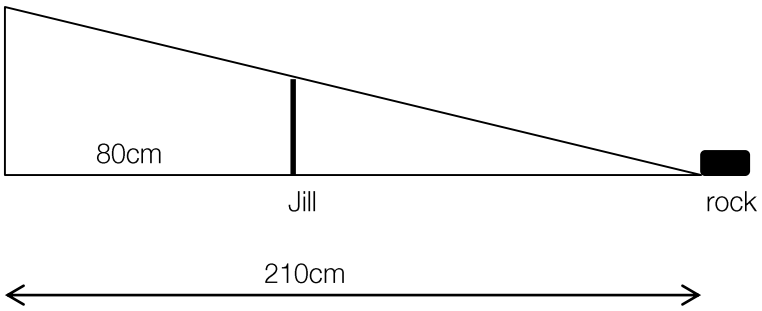
Question 1
Find the value of **ø** in the diagram below, correct to 2 decimal places.



A. 88.15
B. 17.22
C. 71.94
D. 18.06
E. 1.85

The following information relates to questions 2 and 3:

Question 2
Jack is standing 80cm from Jill and 210cm from a rock. If Jill is 140cm tall, how tall is Jack?



A. 226 cm
B. 87 cm
C. 195 cm
D. 130 cm
E. 53 cm

Question 3
What is Jack's angle of depression when looking at the rock?

A. 43
B. 0.01
C. 42
D. 48
E. 47

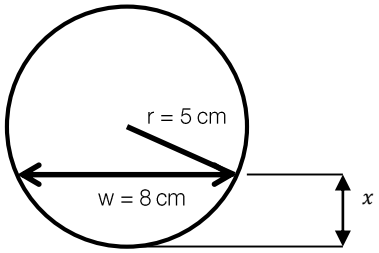
Question 4

Tim is playing with two rectangular blocks. The area of the smaller block is $4cm^2$ whereas the area of the larger block is $16cm^2$. If the volume of the larger block is x cm^3 and the two blocks are similar, what is the volume of the smaller block?

A. $4x$ cm^3
B. $x/4$ cm^3
C. $x/8$ cm^3
D. $8x$ cm^3
E. $x/16$ cm^3

Question 5

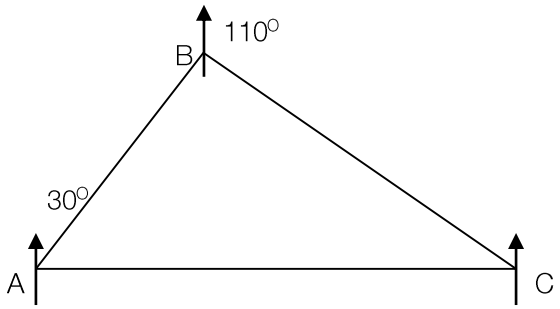
A circle with a radius of 5 cm is dipped in water. The surface of the water has a width of 8 cm. what is the value of x?



A. 2 cm
B. 2.5 cm
C. 3 cm
D. 4 cm
E. 5 cm

Question 6

A triangular orienteering course is shown below.



What is the bearing of B from C?

A. 80^O
B. 110^O
C. 70^O
D. 290^O
E. 250^O

Question 7
MNP is a scalene triangle, with MN = 79cm and NP = 26 cm. The area of the triangle is 100 cm^2. The magnitude of the angle MNP is closest to:

A. 1
B. 2
C. 5
D. 6
E. 100

The following information relates to questions 8 and 9:

Joe is given 10 cm^3 of play dough to make shapes with. She divides the play dough into two even parts and uses one part to make a sphere and the other to make a cone

Question 8
What is the radius of the largest sphere Joe can make with her play dough?

A. 1.29 cm
B. 0.63 cm
C. 0.89 cm
D. 1.34 cm
E. 1.06 cm

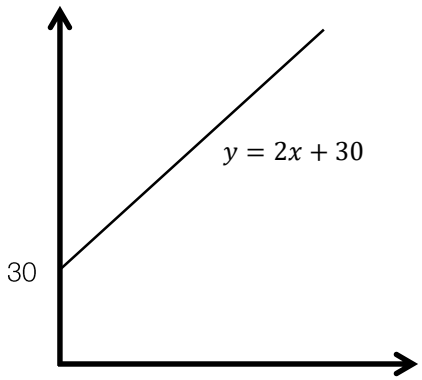
Question 9
If the height of the cone is double its radius, what is the radius of Joe's cone?

A. 1.48 cm
B. 1.34 cm
C. 1.68 cm
D. 1.76 cm
E. more information is required

Module 3: Graphs and Relations

Question 1

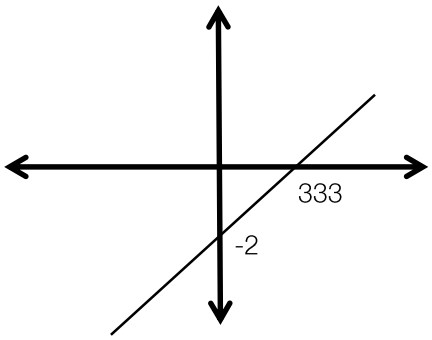
What is the y-intercept of the following graph?



A. 30
B. 40
C. 15
D. 25
E. 2

Question 2

If the scales on the graph are the same for both the y-axis and x-axis, what is the slope of the graph shown below?



A. 4
B. 2
C. 1
D. -1
E. -2

The following information relates to questions 3 and 4:

Wendy sells ice creams. Each cone costs Wendy 20 cents and each scoop of ice cream costs her 60 cents. She also has a fixed cost of $20.

Question 3
If Wendy sells each cone of ice cream for $3, how many ice creams will she have to sell to break even?

A. 9
B. 7
C. 10
D. 11
E. 8

Question 4
How many ice creams will Wendy have to sell to make a profit of at least $10?

A. 7
B. 13
C. 8
D. 4
E. 14

Question 5
Which statement is true about the following lines?

$y = 2x + 5$

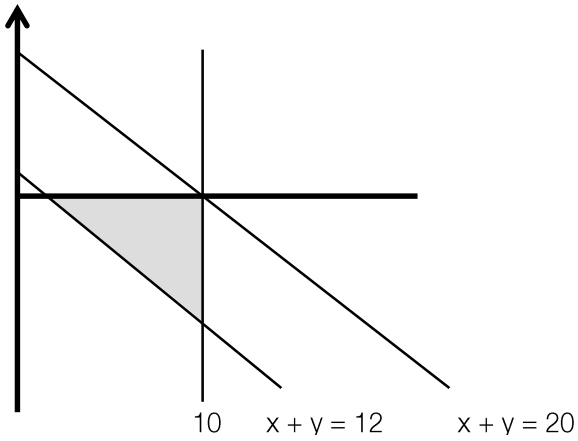
$y = -\frac{1}{2}x + 5$

A. The lines are parallel
B. The lines are perpendicular
C. The lines have the same x-intercept
D. The lines are the same
E. The lines do not intersect

Question 6

Judy runs a fruit stand where she sells only melons and oranges.

The graph below shows the constraint functions for Judy's fruit stand, where x represents the number of melons and y represents the number of oranges.

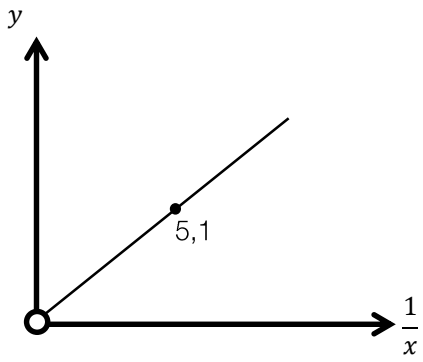


Which of the following statements is true?

A. the stand must have at least 20 fruit
B. the stand must have at least 12 fruit
C. the maximum number of melons Judy can have is 12
D. the maximum number of apples Judy can have is 10
E. the stand must have at least 12 oranges

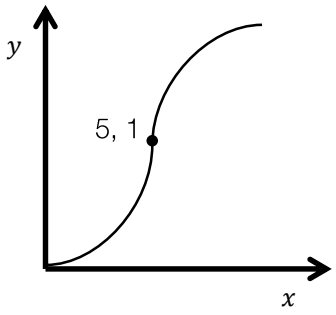
Question 7

The graph below shows the relationship between $1/x$ and y.

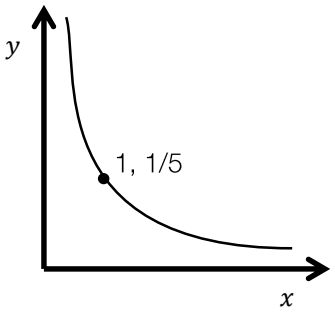


Which of the following graphs shows the relationship between x and y?

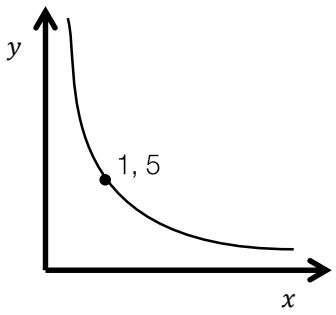
A.



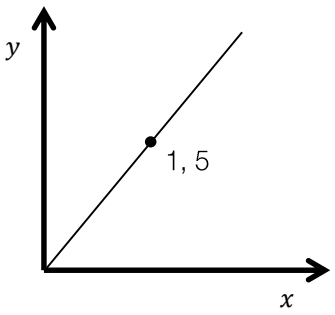
B.



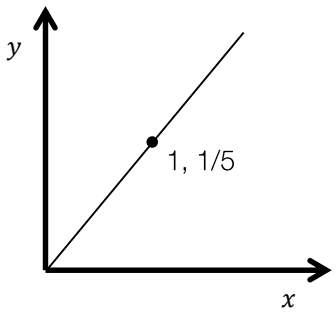
C.



D.



E.



Question 8
Which of the following pairs of equations has no solution?

A. $y = 2x + 8$
$y = 3x + 1$

B. $2y = 4x + 24$
$y = 4x + 8$

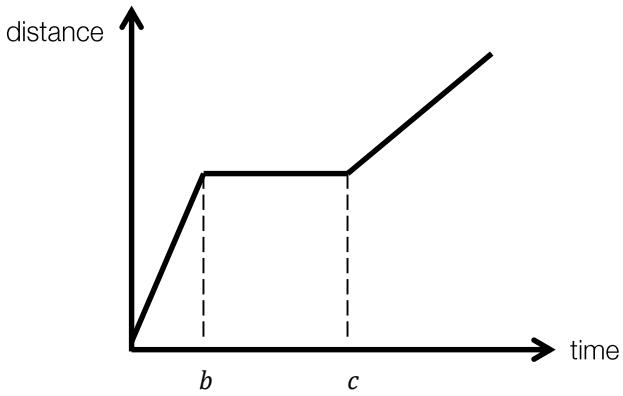
C. $2y = 6x + 96$
$y = 3x + 3$

D. $2x = y + 23$
$x = y + 3$

E. $5y = x + 55$
$y = 2x + 5$

Question 9
The graph below shows Paul's journey from his house to school.

Paul left his house at 8am. He walked for b minutes and then stopped for 5 minutes to pick up his friend. Paul and his friend then walked continuously until they reached school.



$$\begin{cases} distance = 2 \times time & 0 \leq time \leq b \\ distance = \frac{1}{3} \times time + 1 & c \leq time \leq 20 \end{cases}$$

Given that $c - b = 5$, what are the respective values of b and c?

A. 1.6 and 6.6
B. 5 and 10
C. 1.33 and 2
D. 2.5 and 12
E. more information is required

Module 4: Business-related mathematics

Question 1

John invests $8000 in an account that earns 7.2% simple interest per annum. What is the total interest earned on the investment in 10 years?

A. $576000
B. $5760
C. $8000
D. $576
E. $434

Question 2

A new gaming console is priced at $963.05, including GST at 10%.

The price of the console, excluding GST, is:

A. $875.50
B. $1059.36
C. $874.60
D. $866.70
E. impossible to determine without more information

Question 3

Chris purchases a new motorcycle, paying a deposit of $4000, along with monthly repayments of $235 for 2 ½ years.

The total amount Chris pays for the motorcycle is:

A. $4000
B. $7050
C. $4587
D. $11,000
E. $11,050

Question 4

Tina takes out a $20,000 loan from a bank. She must pay compound interest of 12%, compounding annually.

If Tina makes no repayments, what is the total amount owed to the bank after 3 years?

A. $27,200
B. $40,000
C. $23,675
D. $20,000
E. $28,098

Question 5

2 years ago, Karl purchased a photocopier for $20,000, which depreciates by 4c per copy made. Currently, the photocopier is valued at $17,760.

How many copies were made in the last 2 years?

A. 12,300
B. 230,400
C. 56,000
D. 55,500
E. 45,390

Question 6

Karl decides to purchase a different photocopier for $30,000, which depreciates by the reducing balance method, at 3% per annum.

After 20 years, how much has the photocopier depreciated by?

A. $13,686.17
B. $16,313.83
C. $12,594.45
D. $9,450.32
E. $45,390.03

Question 7

A man gives an allowance to his children, and it is to be paid annually in perpetuity from a fund of X dollars. The fund is invested to earn interest at 4.7% per annum and the allowance is to provide an annual payment of $10,000.

The value of X is closest to:

A. $10,470.43
B. $212,765.96
C. $214,765.69
D. $450,422.83
E. $109,450.20

Question 8

The effective interest rate is 9.8% p.a. on a hire purchase with monthly repayments over 4 years. The flat interest rate is closest to:

A. 2%
B. 5.1%
C. 5%
D. 9%
E. 9.8%

Question 9

Suzie invests her inheritance of $500,000 in a perpetuity that pays 10% per annum compounding quarterly. After 34 quarterly payments, how much money remains invested in the perpetuity?

A. $87,000
B. $129,298
C. $453,980
D. $135,640
E. $500,000

Module 5: Networks and decision mathematics

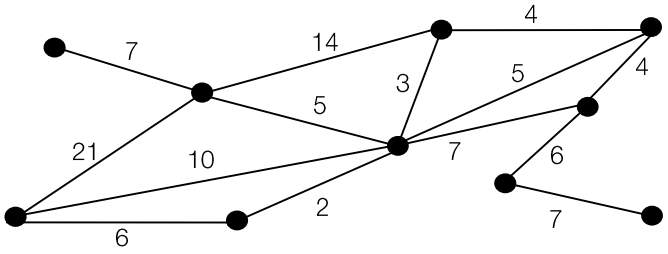
Question 1

A connected, planar graph has 9 vertices and 12 edges. How many faces does it have?

A. 4
A. 5
B. 6
C. 7
D. 8

Question 2

The sum of the weights on the edges of the minimum spanning tree for the below graph is:



A. 44
B. 36
C. 32
D. 33
E. 46

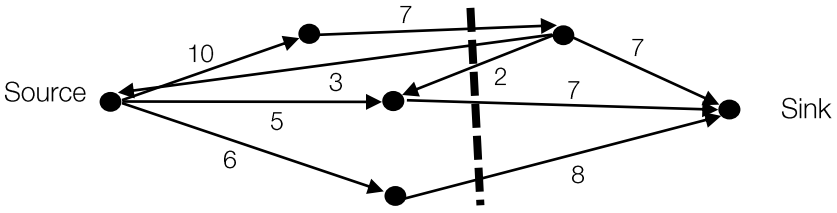
Question 3

A complete graph has 55 edges. How many vertices does it have?

A. 9
B. 10
C. 11
D. 12
E. 13

Question 4

What is the value of the following cut?



A. 27
B. 25
C. 24
D. 20
E. 22

Question 5
The maximum flow for the graph in Question 4 is:

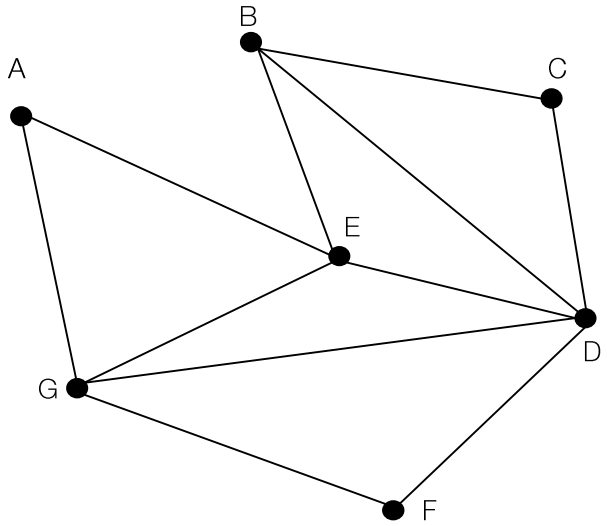
A. 22
B. 21
C. 15
D. 18
E. 17

Question 6
Which of the following is not true for the adjacency matrix below?

$$\begin{bmatrix} 1 & 0 & 1 \\ 0 & 0 & 3 \\ 1 & 3 & 0 \end{bmatrix}$$

A. The graph has 3 vertices.
B. One of the vertices has a degree of 4.
C. Two of the vertices has a degree of 3.
D. One of the vertices has a degree of 2.
E. There are no isolated vertices.

Question 7

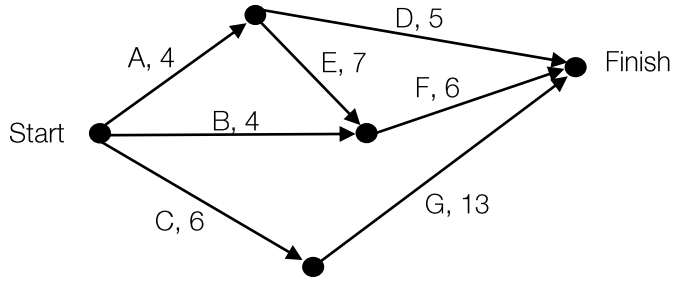


Which one of the following statements is **true** regarding the network above?

A. An Euler path is not possible for the graph.
B. A Hamiltonian path is not possible for the graph.
C. A Hamiltonian circuit is not possible for the graph.
D. A possible Hamiltonian path is BEAGEDGFDBCD.
E. A possible Euler path is BEAGEDGFDBCD.

Question 8

The network below represents a series of tasks that are involved in project. The numbers are in minutes. What is the earliest start time for activity F?



A. 4
B. 5
C. 6
D. 9
E. 11

Question 9

A minimum spanning tree with 5 vertices could present:

A. The shortest path it takes for a person visits 5 shops.
B. The allocation of tasks to 5 workers.
C. A cycle that can be taken to visit 5 towns in the shortest possible route.
D. The shortest length of water pipes needed to connect 5 towns.
E. The minimum amount of time it takes a person to complete 5 tasks in succession.

Module 6: Matrices

Question 1

$$A = \begin{bmatrix} 1 \\ 1 \end{bmatrix}, B = \begin{bmatrix} 1 & 1 \end{bmatrix}$$

The order of matrices A and B, respectively, are:

A. 1 x 1 and 1 x 1
B. 2 x 1 and 1 x 2
C. 1 x 2 and 2 x 1
D. 2 x 1 and 2 x 1
E. 1 x 2 and 1 x 2

Question 2

Azza, Bazza and Cazza have competed in the same events in school athletics every year for 3 years. The following matrix shows who won which event from 2010 to 2012:

$$\begin{matrix} \text{sprint} & \text{long jump} & \text{high jump} & \\ \begin{bmatrix} A & C & C \\ B & B & B \\ C & B & A \end{bmatrix} & & & \begin{matrix} 2010 \\ 2011 \\ 2012 \end{matrix} \end{matrix}$$

A matrix that shows the number of events won by each person each year is:

A. $\begin{matrix} A & B & C & \\ \begin{bmatrix} 1 & 0 & 2 \\ 0 & 3 & 0 \\ 1 & 1 & 1 \end{bmatrix} & & & \begin{matrix} 2010 \\ 2011 \\ 2012 \end{matrix} \end{matrix}$

B. $\begin{matrix} A & B & C & \\ \begin{bmatrix} 1 & 0 & 2 \\ 0 & 3 & 0 \\ 1 & 1 & 0 \end{bmatrix} & & & \begin{matrix} 2010 \\ 2011 \\ 2012 \end{matrix} \end{matrix}$

C. $\begin{matrix} A & B & C & \\ \begin{bmatrix} 1 & 1 & 1 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix} & & & \begin{matrix} 2010 \\ 2011 \\ 2012 \end{matrix} \end{matrix}$

D. $\begin{matrix} A & B & C & \\ \begin{bmatrix} 1 & 1 & 1 \\ 0 & 3 & 0 \\ 1 & 0 & 2 \end{bmatrix} & & & \begin{matrix} 2010 \\ 2011 \\ 2012 \end{matrix} \end{matrix}$

E. $\begin{matrix} A & B & C & \\ \begin{bmatrix} 2 & 0 & 1 \\ 0 & 3 & 0 \\ 1 & 1 & 1 \end{bmatrix} & & & \begin{matrix} 2010 \\ 2011 \\ 2012 \end{matrix} \end{matrix}$

Question 3

The determinant of $\begin{bmatrix} 1 & 2 \\ 5 & x \end{bmatrix}$ is 15. x is therefore equal to:

A. 3
B. 25
C. 0.04
D. 10
E. 20

Question 4
If $\boldsymbol{M}$ is a 2 x 4 matrix and $\boldsymbol{NM}$ is a 3 x 4 matrix, what is the order of matrix $\boldsymbol{N}$?

A. 2 x 4
B. 3 x 2
C. 2 x 3
D. 4 x 2
E. 2 x 4

Question 5
It costs $3.9 to buy 2 bananas, 2 apples and 1 carrot.
It costs $2.40 to buy 1 banana, 1 apple and 1 carrot.
It costs $6.5 to buy 3 bananas, 2 apples and 3 carrots.

Which matrix shows the price of 2 bananas, 2 apples and 2 carrots?

A. $\begin{bmatrix} 3.9 \\ 2.1 \\ 6.3 \end{bmatrix}$

B. $\begin{bmatrix} 0.80 \\ 0.70 \\ 0.90 \end{bmatrix}$

C. $\begin{bmatrix} 1.90 & 1.40 & 1.80 \end{bmatrix}$

D. $\begin{bmatrix} 1.60 \\ 1.40 \\ 1.80 \end{bmatrix}$

E. $\begin{bmatrix} 1.40 \\ 1.60 \\ 1.80 \end{bmatrix}$

The following information relates to question 6 and 7:

Every morning Mary eats peanut butter, jam or nutella. Her choice depends of what she had the previous day, and she never uses the same spread 2 days in a row.

If she ate nutella yesterday, she will have peanut butter today.

If she ate peanut butter yesterday she will have jam today.

Question 6
If Mary eats jam on Monday, what could she eat on Wednesday?

A. Peanut butter or jam
B. Peanut butter or nutella
C. Jam or nutella
D. Peanut butter only
E. Nutella only

Question 7
Which of the following represents a possible transition matrix for Mary?

Assume every matrix is in the form:

$$\begin{matrix} & \text{today} & & \\ & P & J & N \\ \begin{bmatrix} \cdots & \cdots & \cdots \\ \cdots & \cdots & \cdots \\ \cdots & \cdots & \cdots \end{bmatrix} & \begin{matrix} P \\ J \\ N \end{matrix} & & \text{tomorrow} \end{matrix}$$

A. $\begin{bmatrix} 0 & 0 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 0 \end{bmatrix}$

B. $\begin{bmatrix} 1 & 0 & 1 \\ 1 & 0 & 1 \\ 1 & 0 & 1 \end{bmatrix}$

C. $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

D. $\begin{bmatrix} 0 & 0 & 1 \\ 1 & 1 & 0 \\ 0 & 1 & 0 \end{bmatrix}$

E. $\begin{bmatrix} 0 & 1 & 1 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

The following information relates to questions 8 and 9:

There are 4 schools in Richmond – Richmond Public (A), Richmond Private (B), Richmond Boys (C) and Richmond Girls (D).

A certain percentage of students change between the schools each year.

The transition matrix is:

$$\begin{array}{c} \\ A \\ B \\ C \\ D \end{array} \begin{array}{c} \text{this year} \\ \begin{array}{cccc} A & B & C & D \end{array} \\ \begin{bmatrix} 0.8 & 0.1 & 0.2 & 0.2 \\ 0.1 & 0.2 & 0.2 & 0.2 \\ 0.1 & 0.7 & 0.6 & 0 \\ 0 & 0 & 0 & 0.6 \end{bmatrix} \end{array} \begin{array}{l} \\ A \\ B \\ C \\ D \end{array} \quad \text{next year}$$

Question 8

In the long run, which school(s) will have the most students?

A. Richmond Public and Boys
B. Richmond Public only
C. Richmond Private and Girls
D. Richmond Private only
E. Richmond Boys only

Question 9

There are 1300 students at Richmond Public this year. If there were the same number of students in each school last year, how many students were there in total?

A. 1000
B. 1040
C. 1300
D. 4000
E. 5200

Formula Sheet

Core: Data analysis

Standardised score: $z = \frac{x - \bar{x}}{s_x}$

Least squares line: $y = a + bx$ where $b = r\frac{s_y}{s_x}$ and $a = \bar{y} - b\bar{x}$

Residual value: $\text{residual value} = \text{actual value} - \text{predicted value}$

Seasonal index: $\text{seasonal index} = \frac{\text{actual figure}}{\text{deseasonalised figure}}$

Module 1: Number patterns

Arithmetic series: $a + (a + d) + \cdots + (a + (n-1)d) = \frac{n}{2}[2a + (n-1)d] = \frac{n}{2}(a + l)$

Geometric series: $a + ar + ar^2 + \cdots + ar^{n-1} = \frac{a(1 - r^n)}{1 - r}, r \neq 1$

Infinite geometric series: $a + ar + ar^2 + ar^3 + \cdots = \frac{a}{1 - r}, |r| < 1$

Module 2: Geometry and trigonometry

Area of a triangle: $\frac{1}{2}bc\sin A$

Heron's formula: $A = \sqrt{s(s-a)(s-b)(s-c)}$, where $s = \frac{1}{2}(a + b + c)$

Circumference of a circle: $2\pi r$

Area of a circle: πr^2

Volume of a sphere: $\frac{4}{3}\pi r^3$

Surface area of a sphere: $4\pi r^2$

Volume of a cone: $\frac{1}{3}\pi r^2 h$

Volume of a cylinder: $\pi r^2 h$

Volume of a prism: $\text{area of base} \times \text{height}$

Volume of a pyramid: $\frac{1}{3}\text{area of base} \times \text{height}$

Pythagoras' theorem: $c^2 = a^2 + b^2$

Sine rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine rule: $c^2 = a^2 + b^2 - 2ab\cos C$

Module 3: Graphs and relations

Straight line graphs

Gradient (slope): $m = \frac{y_2 - y_1}{x_2 - x_1}$

Equation: $y = mx + c$

Module 4: Business-related mathematics

Simple interest: $I = \frac{PrT}{100}$

Compound interest: $A = PR^n$, where $R = 1 + \frac{r}{100}$

Hire purchase: $\text{effective rate of interest} \approx \frac{2n}{n+1} \times \text{flat rate}$

Module 5: Networks and decision mathematics

Euler's formula: $v + f = e + 2$

Module 6: Matrices

Determinant of a 2 x 2 matrix: $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$, $\det A = \begin{vmatrix} a & b \\ c & d \end{vmatrix} = ad - bc$

Inverse of a 2 x 2 matrix: $A^{-1} = \frac{1}{\det A}\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$, where $\det A \neq 0$

End of Booklet

Looking for solutions? Visit www.engageeducation.org.au/practice-exams

To enrol in one of our Further Maths lectures head to: http://engageeducation.org.au/lectures/