External assessment 2021

Multiple choice question book

General Mathematics SEE

SEE 2 Paper 1

General instruction

- Work in this book will not be marked.

Queensland Government | QCAA Queensland Curriculum & Assessment Authority

Section 1

QUESTION 1

The second smoothed value for the 3-point moving average is

Day	1	2	3	4	5	6	7
Value	5	10	18	32	52	70	90

(A) 32

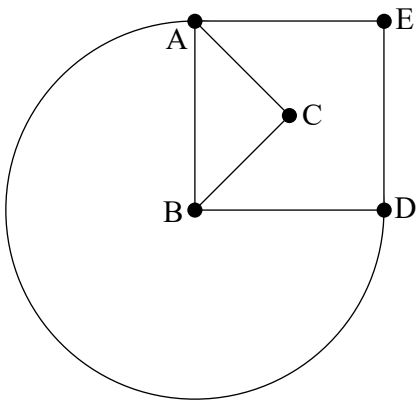
(B) 25

(C) 20

(D) 18

QUESTION 2

How many faces does this planar graph have?



(A) 3

(B) 4

(C) 5

(D) 7

QUESTION 3

The table shows the results of a student survey about their preferred movie genre.

	Genre		
Year level	**Comedy**	**Action**	**Science fiction**
7–8	20	25	21
9–10	24	53	21
11–12	36	28	12

Of the students who preferred comedy, what percentage were in Year 9 or higher?

(A) 25%

(B) 30%

(C) 60%

(D) 75%

QUESTION 4

A confounding variable is a variable that

(A) can only take on a certain number of values.

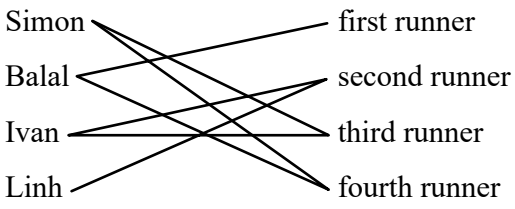
(B) remains constant throughout a statistical investigation.

(C) is used to predict a difference in the response variable.

(D) other than the explanatory variable, influences the response variable.

QUESTION 5

The coach of a four-person relay team is deciding on the order of the runners. Use the bipartite graph to determine which statement is correct.



(A) Linh should be the first runner.

(B) Simon should be the second runner.

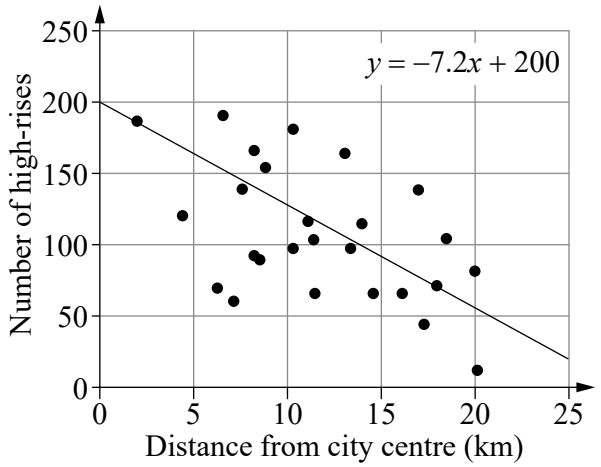
(C) Ivan should be the third runner.

(D) Balal should be the fourth runner.

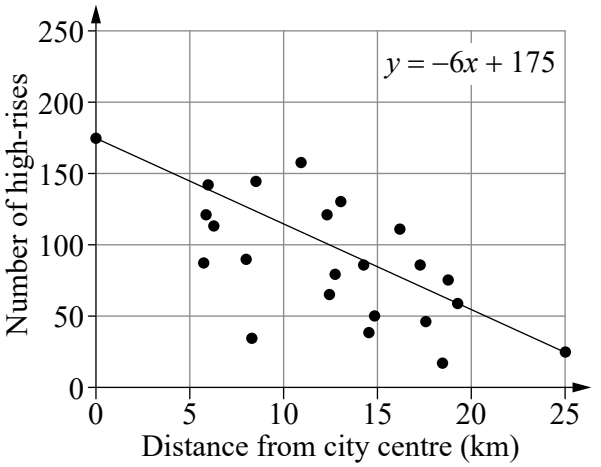
QUESTION 6

These scatterplots show the number of high-rises in a city and their distance from the city centre.
Which scatterplot was used to extrapolate that 25 km from the city centre there were 20 high-rises?

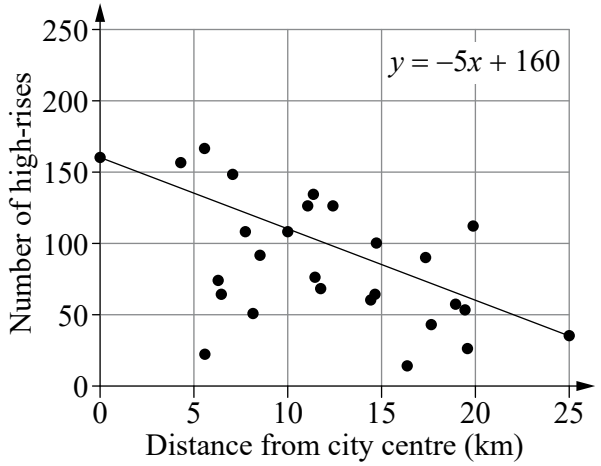
(A)



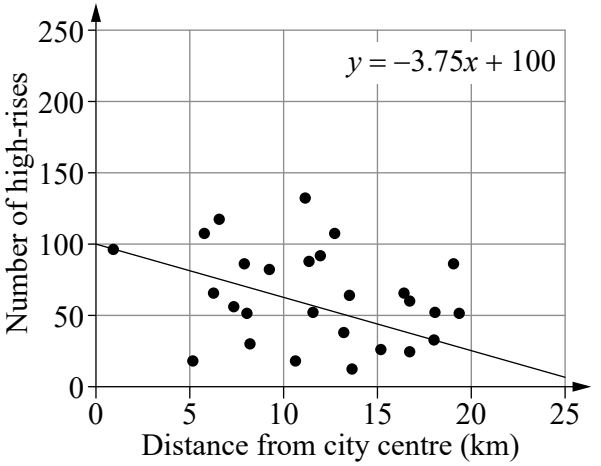
(B)



(C)

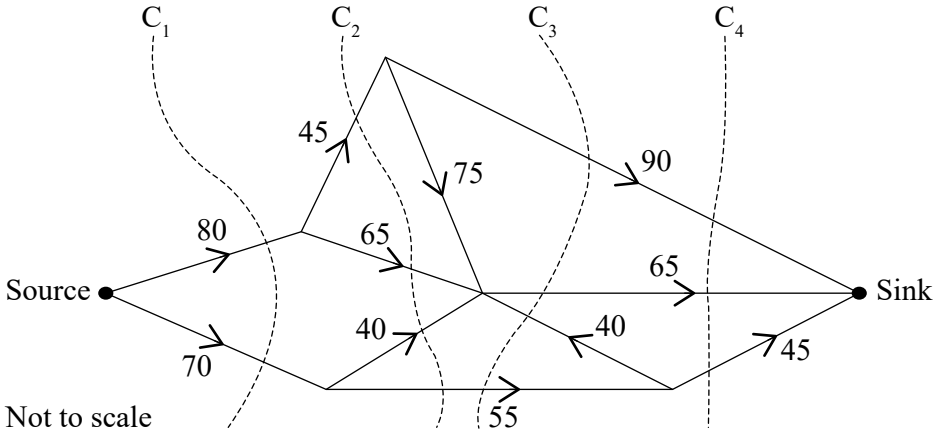


(D)



QUESTION 7

Which cut (C_1, C_2, C_3 or C_4) could be used to determine the maximum flow from the source to the sink in this network?



(A) C_1

(B) C_2

(C) C_3

(D) C_4

QUESTION 8

A basketball competition has six teams that have completed three rounds of competition as shown.

	Bears	**Eagles**	**Lions**	**Meerkats**	**Tigers**	**Wombats**
Bears	—	—	✓	—	✓	✓
Eagles	—	—	✓	✓	—	✓
Lions	✓	✓	—	✓	—	—
Meerkats	—	✓	✓	—	✓	—
Tigers	✓	—	—	✓	—	✓
Wombats	✓	✓	—	—	✓	—

The graph to represent this information has

(A) 6 edges.

(B) 9 edges.

(C) 15 edges.

(D) 18 edges.

QUESTION 9

A staircase is to be extended by installing n additional stairs. Each stair is 25 cm high. If the existing staircase reaches 1.2 m off the ground, which rule models the total height the stairs will reach in centimetres?

(A) $t_n = 25 + (n-1) \times 1.45$

(B) $t_n = 1.2 + (n-1) \times 25$

(C) $t_n = 145 + (n-1) \times 25$

(D) $t_n = 25 + (n-1) \times 120$

QUESTION 10

City A is located at 55° N, 120° E and City B is located at 40° N, 165° E. The sun will rise in City A approximately

(A) 1 hour before it rises in City B.

(B) 1 hour after it rises in City B.

(C) 3 hours before it rises in City B.

(D) 3 hours after it rises in City B.

QUESTION 11

Which option is an example of bivariate data?

(A) The rating given to a brand of meat pies as poor, fair or good.

(B) The number of people in a household and amount of water used.

(C) The number of cars passing through a particular set of traffic lights.

(D) The time a person spends using a mobile phone on a Friday evening.

QUESTION 12

Which statement is correct?

(A) A minimum spanning tree must contain a loop.

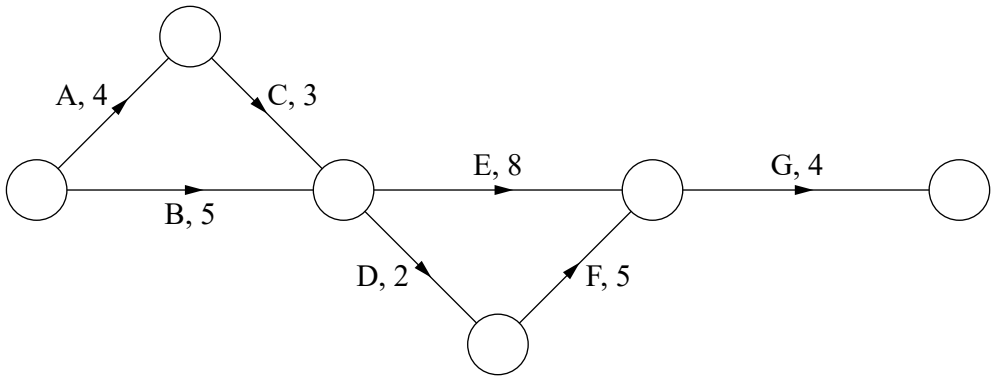
(B) A minimum spanning tree must contain a cycle.

(C) Every network has only one minimum spanning tree.

(D) A minimum spanning tree has one more vertex than the number of edges.

QUESTION 13

Based on this project network, what is the minimum number of days required to complete the project?



(A) 16

(B) 17

(C) 19

(D) 31

QUESTION 14

A town's current population of 15 480 is predicted to grow steadily at an annual rate of 12%. The predicted population after 10 years is approximately

(A) 48 079

(B) 34 056

(C) 18 576

(D) 17 338

QUESTION 15

Which of the following investment options gives the best return?

(A) 5.93% p.a. compounding daily

(B) 5.95% p.a. compounding monthly

(C) 5.97% p.a. compounding quarterly

(D) 5.99% p.a. compounding six-monthly

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