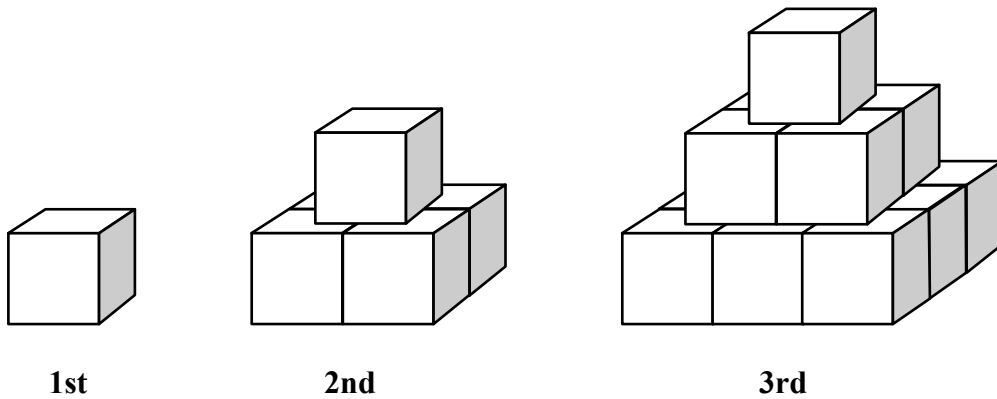


UNIT 4**Question 10**

Cubes of equal size can be stacked to produce *step pyramids*. The first three in a series of step pyramids are shown below.

Note that there are fourteen cubes in the third step pyramid (i.e. there are no hidden spaces in the step pyramids in the series).



How many cubes will be added to the fourth step pyramid in the series in order to make the fifth step pyramid?

- | | |
|-------------|-------------|
| A 16 | C 30 |
| B 25 | D 36 |

UNIT 5

Questions 11–16

The following passage has been adapted from an article in The Herald newspaper, published in Melbourne in June 1938.

Every week Mrs Brown has 25 shillings and any extra money she can get from the bone and bottle man, to buy food. With great care and forethought she manages to keep within this amount.

Mrs Brown is very careful with little economies – for instance, she never buys dripping, but suet¹, and renders it. She keeps a stock-pot and never sells the bones until the marrow and last scraps of nourishment have been wrung from them. And, of course, she never sells any fat. 5

Twice a week she goes to the market for meat, eggs, fruit and vegetables and keeps them in a drip-safe². She is quite content to pass by fruit and vegetables which are out of season – not for her either are those handy but expensive tins of pork and beans, those fascinating little snacks, which are not really necessary for the family diet. Instead her meals draw their inspiration from the stock-pot, with its vegetable waters, bacon rinds, cheese parings and whisper of garlic, and an appreciative feeling for salt and cayenne pepper. So she has plenty of liquid rich in mineral salts for soups and gravies and extra money is not needed for tonics or patent medicines or pick-me-ups. 10
15

¹ dripping and suet are forms of animal fat

² drip-safe: a simple means of keeping food cool

Typical meals for Mrs Brown's family

A weekday:

BREAKFAST

porridge, milk and honey
one slice each of bread and butter – after that
bread and dripping
cocoa and tea

LUNCH

scrambled egg sandwiches, jam sandwiches
fruit
tea and sugar

DINNER

tripe, delicately seasoned with nutmeg, garlic,
onions and mashed potatoes
stewed prunes

Sunday:

BREAKFAST (the same)

DINNER

lamb's fry soufflé (white bread, 2 eggs, minced
liver and heart, herbs), potatoes, boiled
cucumber and white sauce
baked unpolished rice custard with sultanas

EVENING MEAL

grated cheese omelette
bread, butter, dripping, jam
cocoa

Question 11

The passage suggests that Mrs Brown's housekeeping methods are

- A unnecessarily severe.
- B tediously uninspiring.
- C admirably disciplined.
- D sensibly labour-saving.

Question 12

The statement that Mrs Brown 'never sells any fat' (line 7) suggests that, in 1938, fat was considered to be

- A useless.
- B unhealthy.
- C nourishing.
- D inexpensive.

Question 13

'One slice each of bread and butter – after that bread and dripping' (weekday breakfast) suggests that

- A the Brown children sometimes go hungry.
- B butter is more expensive than dripping.
- C bread is a luxury in the Brown family.
- D the Brown children do not like butter.

Question 14

The main point of the passage is to

- A describe an example of thriftiness.
- B outline the benefits of a healthy diet.
- C publish menus that are easy to prepare.
- D illustrate the difficulty of surviving on a low wage.

For Question 15 consider the cartoon below, which refers to the practice of selling household bones, rags and bottles. For Question 16 consider all of the material in this unit.



'Any rags or bones today?'
'No, wife's away.'
'Any bottles?'

Hal Gye, 1925

Question 15

The cartoon suggests that when his wife is away this husband

- A spends little time at home.
- B spends a lot of time drinking.
- C accumulates a lot of household rubbish.
- D takes over the management of the household.

Question 16

The material in this unit suggests all of the following about the historical period **except** one. Which one?

- A Men were not expected to cook.
- B People without work were ridiculed.
- C Efficiency and economy were valued.
- D Women were in charge of house-work and cooking.

UNIT 6**Question 17**

People at a restaurant sometimes clink (touch) their glasses together as a sign of celebration. For three people at a table, three clinks are required in total in order that each person clinks glasses with the other two people.

For four people at a table, how many clinks are required in total for each person to clink glasses once with each other person at the table?

- | | | | |
|----------|---|----------|---|
| A | 4 | C | 6 |
| B | 5 | D | 8 |

UNIT 7**Question 18**

Tingles and Tangles are two kinds of sweet. As part of a marketing exercise, combinations of these two sweets are sold together in special packets. In one combination packet, one Tingle and two Tangles are sold together for \$3.20. In another combination packet, one Tangle and three Tingles are sold together for \$4.60.

If there is no discount when the Tingles and Tangles are sold together in a combination packet, how much are Tingles and Tangles when sold separately?

- A** Tingles \$1.20, Tangles \$1.00
- B** Tingles \$1.00, Tangles \$1.20
- C** Tingles \$0.80, Tangles \$1.40
- D** There is insufficient information to determine the answer.

UNIT 8**Question 19**

The number 5 is a square root of 25 because $5 \times 5 = 25$. The symbol for the positive square root of a number is $\sqrt{}$.

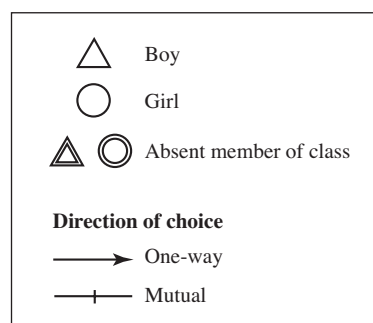
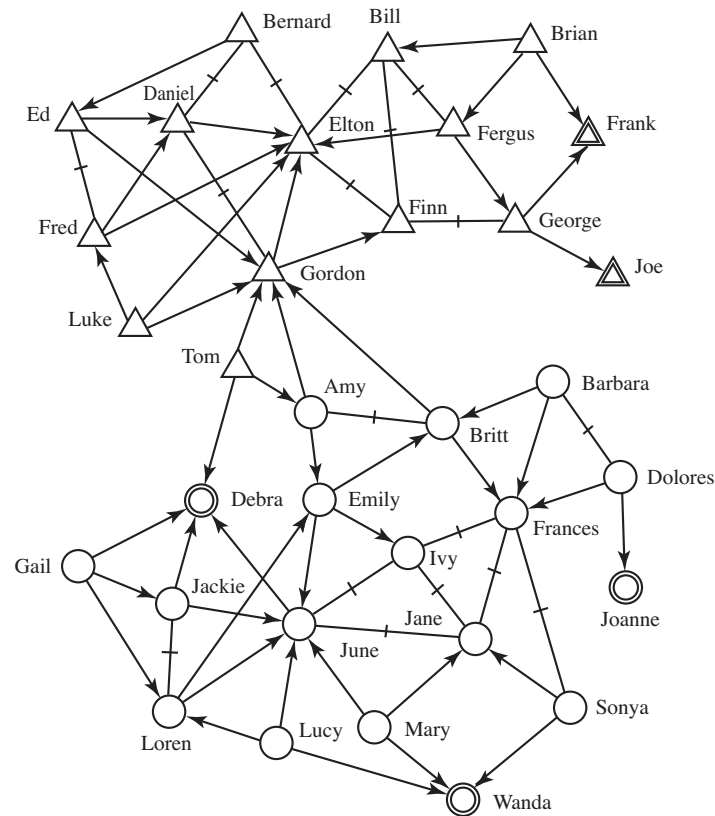
If $x + x - \sqrt{x} = 6$, x is

- | | | | |
|----------|---|----------|----|
| A | 2 | C | 9 |
| B | 4 | D | 16 |

UNIT 9

Questions 20–23

A class of school students was asked to choose three members of the group that they would like to ask to a party. Their choices are recorded below in a diagram called a sociogram.



Question 20

Which of the following students seems the most popular?

- | | |
|---------------|------------------|
| A Luke | C Lucy |
| B Tom | D Dolores |

Question 21

The sociogram shows that

- | | |
|--|---|
| A Ed is more popular than Fergus. | C Fergus is as popular as Finn. |
| B Finn is more popular than Bill. | D George is as popular as Frank. |

Question 22

Which one of the following groups is the most cohesive and close-knit?

- | | |
|---|--|
| A Luke
Elton
Bernard
Daniel | C June
Jane
Frances
Ivy |
| B Bill
Elton
Finn
Fergus | D Ivy
Jane
Sonya
Frances |

Question 23

The sociogram shows that

- A** choices between the sexes are not mutual.
- B** the most popular in each gender group choose each other.
- C** there are more mutual choices among the boys than the girls.
- D** there are more mutual choices among the girls than the boys.

UNIT 10

Questions 24–26

A companion plant is a plant that is grown together with another plant. For the Vegetables I, II, III, IV and V, Table 1 shows those companion plants that are:

- (a) *good companions* (☼) – result in better growth for the vegetable;
- (b) *bad companions* (☹) – result in worse growth for the vegetable; or
- (c) *neutral companions* (N) – have neither a good nor bad effect on the growth of the vegetable.

Table 1

Companion Plant	Vegetable				
	I	II	III	IV	V
basil	N	N	☹	N	N
bean	☼	☼	☼	N	☼
beetroot	☼	N	N	N	N
cabbage	N	N	N	N	☼
carrot	N	N	☼	N	N
celery	☹	☼	☼	N	N
garlic	☹	N	N	N	N
lettuce	N	N	N	☼	N
nasturtium	N	☹	N	N	N
onion	☼	N	N	☼	N
oregano	☹	☼	N	N	N
parsnip	N	N	N	☹	☹
pea	N	☹	☼	☼	N
potato	☼	☹	☹	N	☹
radish	N	N	☼	☹	N
sage	☼	N	☹	☹	N
strawberry	☹	☹	N	N	N
tomato	☹	N	N	☼	☼

Question 24

Which one of the following would be the best plant to grow between a row of Vegetable I and a row of Vegetable III?

- A basil
- B beans
- C beetroot
- D carrots

Question 25

Table 1 shows that

- A beans are good companions for Vegetables I and IV.
- B celery is a good companion for Vegetables I and III.
- C peas are good companions for Vegetables III and IV.
- D radishes are good companions for Vegetables III and IV.

Question 26

A good companion is assigned a value of + 1, a bad companion a value of – 1, and a neutral companion a value of 0.

For the five vegetables in Table 1 (I, II, III, IV and V), which of the following companion plants has an overall value of 0?

- A oregano
- B beetroot
- C nasturtium
- D strawberry

UNIT 11

Questions 27–30

Cobweb Summer

This dry summer has been a spider's heyday.
 Their geometric premises, extended widely,
 free from bombardment, hung unbroken.

A prodigal¹ summer, though the gardens dried.
 Burdened with so much happiness 5
 I knew the web of joy must sometime tear,

These webs of amity² that are your art
 still hold, though the small spinner tires in the mending.
 Such shapes, such silk, all far too fine for keeping.

The rainy days delayed, we held our breath. 10
 Then the sky darkened. Now it comes
 and the first drops strike heavy, cold.
 In rising wind the web tears from the vine.

Barbara Giles

¹ prodigal: wasteful, extravagant

² amity: friendship

Question 27

In describing the cobwebs, the speaker gives particular emphasis to their

- | | |
|------------------|-----------------------------|
| A strength. | C tenacity and dirtiness. |
| B deceptiveness. | D uniformity and fragility. |

Question 28

In lines 6–9 the speaker associates the cobwebs with

- | | |
|-----------------------------|-----------------------------------|
| A affection and attachment. | C entrapment and exploitation. |
| B permanence and security. | D constant but mindless activity. |

Question 29

The use of 'prodigal' and 'burdened' in lines 4 and 5 suggests that the happiness of summer was

- | | |
|-------------------------|-------------------------|
| A treasured and hidden. | C carefree and relaxed. |
| B almost overwhelming. | D kept within bounds. |

Question 30

The statement 'Now it comes' (line 11) suggests that the speaker is

- | | |
|-----------------------------|----------------------|
| A accepting the inevitable. | C overcome with joy. |
| B filled with impatience. | D full of hope. |

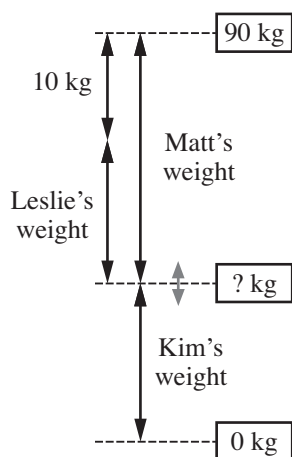
UNIT 12

Question 31

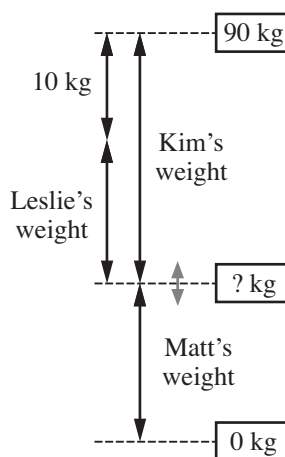
Consider three people from one family – Kim, Leslie and Matt. Together, Kim and Matt weigh 90 kg. Together, Leslie and Matt weigh 80 kg.

Which one of the following best represents the weight relationships between Kim, Leslie and Matt?

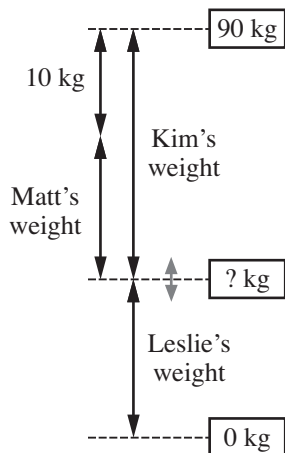
A



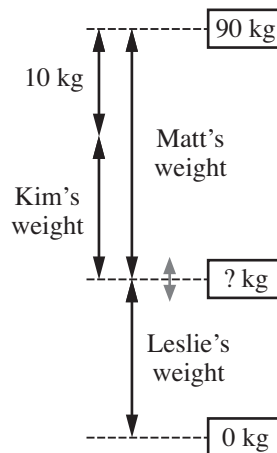
C



B



D



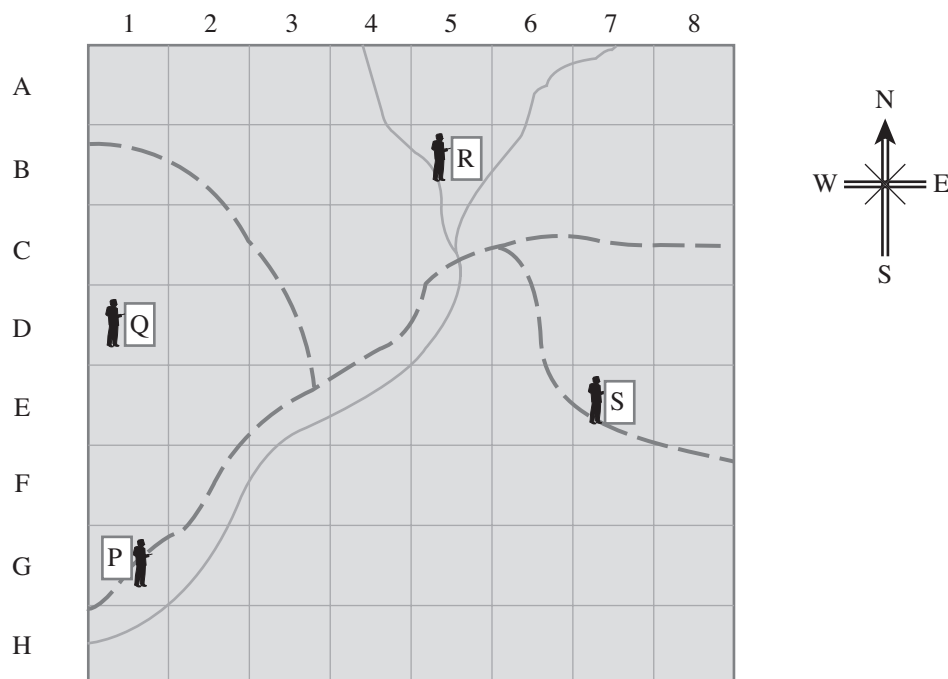
UNIT 13**Questions 32–35**

Germaine is lost in the area shown by the map below. The dashed lines represent roads and the solid lines represent streams.

Four rangers are sent out to find her.

Germaine has a two-way radio. The rangers have devices that can detect the direction of Germaine's radio signal but not her distance from them.

- Each small square on the map represents an area 0.5 km by 0.5 km.
- Assume that each ranger is exactly in the centre of a square.
- Assume that Germaine is exactly in the centre of a square.



Question 32

Suppose Germaine is exactly southwest of Ranger R and exactly southeast of Ranger Q.

In which square is she located?

- A D5
- B E2
- C F3
- D There is not enough information provided to answer.

Question 33

How far is Ranger Q from Ranger P?

- A 3 km
- B 2 km
- C 1.5 km
- D 1 km

Question 34

If Germaine is exactly south of one ranger and exactly west of another, in how many squares of the map might she be located?

- A one
- B two
- C three
- D four

Question 35

If Germaine is exactly northeast of one ranger and exactly northwest of another, in how many squares of the map might she be located?

- A one
- B two
- C three
- D four

UNIT 14**Questions 36–38**

A company makes a fruit-flavoured *cordial concentrate* that contains 40% fruit juice.

To make a *cordial drink*, an amount of cordial concentrate is poured into a glass and then four times as much water is added.

Question 36

Marina wants to make enough cordial drink to fill her 500 mL drink bottle.

What amount of cordial concentrate should Marina pour into her drink bottle before she adds the water?

- | | |
|-----------------|-----------------|
| A 125 mL | C 100 mL |
| B 120 mL | D 75 mL |

Question 37

The percentage of fruit juice in a glass of cordial drink is

- | | |
|--------------|---------------|
| A 5%. | C 10%. |
| B 8%. | D 12%. |

Question 38

Con wants to make enough cordial drink to fill a 1200 mL drink bottle.

After the cordial concentrate has been put into the bottle, how much water needs to be added?

- | | |
|-----------------|------------------|
| A 240 mL | C 960 mL |
| B 800 mL | D 1000 mL |

UNIT 15**Questions 39–41**

Steve saw the following advertisement for light bulbs. The two kinds of bulb provide the same level of lighting.

Long-Life Fluorescent Light Bulbs — \$25.00 each

Regular Incandescent Light Bulbs — \$3.00 each

He wants to put a new light into his garage and wishes to compare the total cost of using a long-life fluorescent light bulb (LLB) with the total cost of using a regular incandescent light bulb (RLB).

When he rings the shop, he gets the following additional information:

- An LLB lasts 8000 hours. It costs \$3.00 for electricity for 1000 hours of use.
- An RLB lasts 1000 hours. It costs \$15.00 for electricity for 1000 hours of use.

Note that *total cost* is the *purchase cost* plus *cost of electricity*.

Question 39

What is the total cost of using RLBs for 5000 hours of lighting?

- | | |
|---------------|---------------|
| A \$28 | C \$75 |
| B \$40 | D \$90 |

Question 40

For a period of 8000 hours, compared with the total cost of an LLB, the total cost of RLBs is

- | | |
|----------------------|---------------------|
| A \$144 more. | C \$79 more. |
| B \$95 more. | D \$49 more. |

Question 41

When is the total cost of using an LLB equal to the total cost of using RLBs?

- A** at a time between 750 and 1250 hours
- B** at a time between 1500 and 2000 hours
- C** at a time between 2500 and 3000 hours
- D** in none of the above situations

UNIT 16

Questions 42–45

The following passage is from a short story entitled ‘The Wind Blows’, written in the early part of the 20th century. Matilda is going to her piano lesson.

‘Matilda, Matilda. Come back im-me-diatly! What on earth have you got on your head? It looks like a tea cosy. And why have you got that mane of hair on your forehead?’

‘I can’t come back, Mother. I’ll be late for my lesson.’

‘Come back immediately!’

She won’t. She won’t. She hates Mother. She runs down the road.

In waves, in clouds, in big round whirls the dust comes stinging, and with it little bits of straw and chaff and manure. There is a loud roaring sound from the trees in the gardens, and standing at the bottom of the road outside Mr Bullen’s gate she can hear the sea sob: ‘Ah! . . . Ah . . . Ah–h!’ But Mr Bullen’s drawing room is as quiet as a cave. The windows are closed, the blinds half-pulled, and she is not late. The-girl-before-her has just started playing MacDowell’s ‘To an Iceberg’. Mr Bullen looks over at her and half smiles.

‘Sit down,’ he says. ‘Sit over there in the sofa corner, little lady.’

Question 42

At the beginning of the passage, Matilda’s mood is

- | | |
|--------------------------|-----------------------------|
| A morose, like the sea. | C niggling, like the dust. |
| B cold, like an iceberg. | D impetuous, like the wind. |

Question 43

One plausible interpretation of the role of the sea in this story is that it provides a

- A centre of frenzy additional to the whirling wind.
- B reinforcement to the comments shouted by Matilda’s mother.
- C strong contrast to the piece played by ‘the-girl-before’ Matilda.
- D transition between the atmosphere created by the wind and Mr Bullen’s room.

Question 44

Mr Bullen’s attitude towards Matilda suggests that he

- | | |
|---------------------------------------|----------------------------|
| A is more respectful than her mother. | C wants to intimidate her. |
| B is unpredictable, like the wind. | D finds her puzzling. |

Question 45

For Matilda, music lessons are a form of

- | | |
|-----------|---------------|
| A ordeal. | C drudgery. |
| B refuge. | D repentance. |

UNIT 17

Questions 46–47

Figure 1 shows the traffic flow rate along a freeway for some of the years from 1976 to 1993. The traffic flow rate is the average number of cars that pass a given point on the freeway in either direction each day of a calendar year.

A 'line of best fit' has been drawn through the points on the graph.

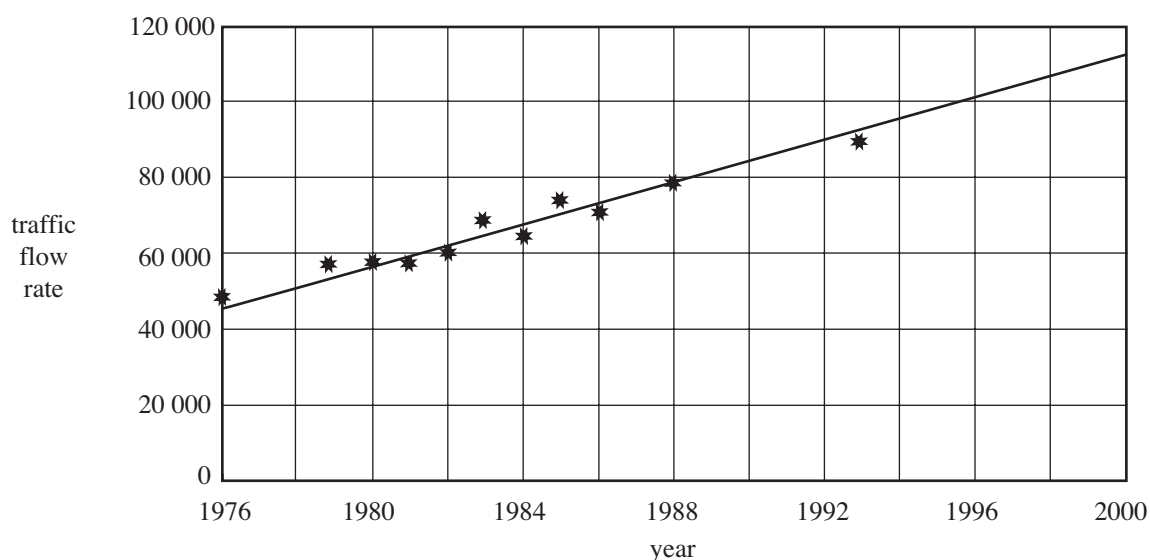


Figure 1

Note: In this unit, 'average' refers to 'mean'.

Question 46

The freeway was built in 1960.

According to the line of best fit, which one of the following is the best estimate of the traffic flow rate in 1966?

- | | |
|---|---|
| <p>A 25 000</p> <p>B 30 000</p> | <p>C 35 000</p> <p>D 40 000</p> |
|---|---|

Question 47

Which one of the following changes would be **least** likely to affect the line of best fit in the future?

- A** More people use public transport.
- B** More people use computers to work from home.
- C** More people share cars to travel to and from work.
- D** More flexible work arrangements allow people to travel to work at different times of the day.

UNIT 18

Question 48

'I want to be what I was when I wanted to be what I am now.'

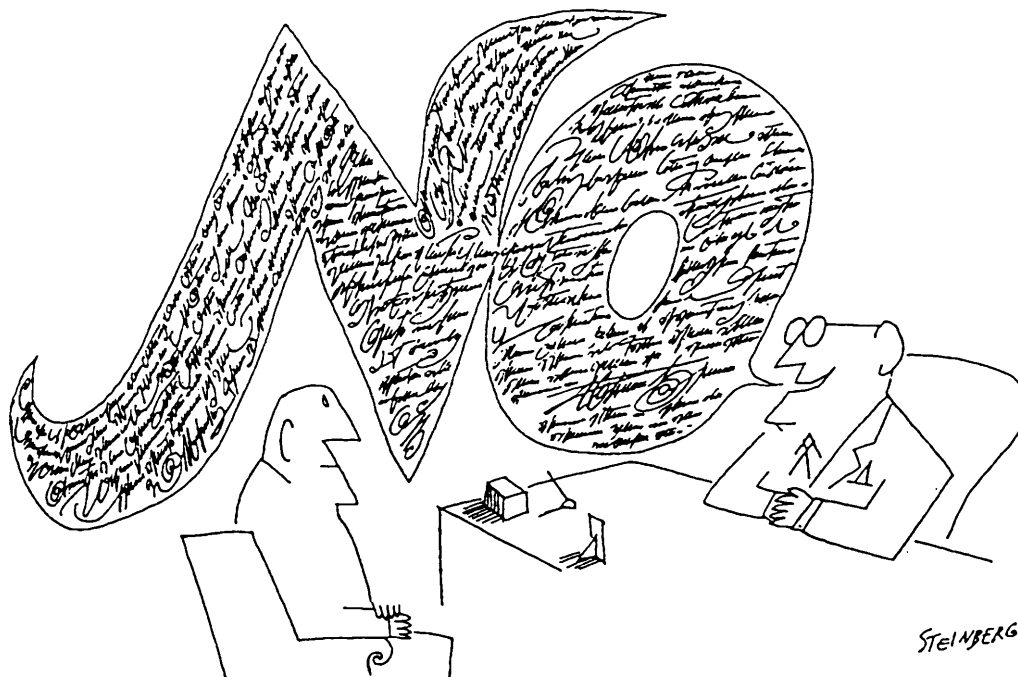
London Graffiti

This statement expresses

- A longing for the past.
- B acceptance of one's destiny.
- C excitement about the future.
- D satisfaction with the present.

UNIT 19

Question 49



Which of the following best describes the response of the man behind the desk?

The language is

- A blunt but the meaning is obscure.
- B mild but the manner is aggressive.
- C elaborate but the meaning is plain.
- D provocative but the manner is conciliatory.

UNIT 20

Question 50–52

A railway line is being planned to connect Garden City (X) and Silver City (Y) as illustrated in Figure 1. The shaded area is mountainous and unsuitable for laying train track. The rest of the area is flat and suitable for laying train track.

Each square in the grid represents a $10\text{ km} \times 10\text{ km}$ area.

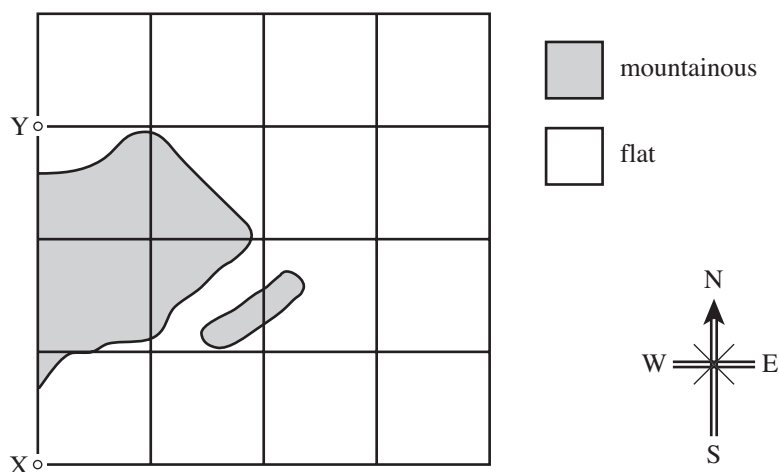


Figure 1

Question 50

Of the following, the best estimate of the area that is covered by mountains is

- | | |
|-------------------------|--------------------------|
| A 30 square kilometres. | C 300 square kilometres. |
| B 50 square kilometres. | D 500 square kilometres. |

Question 51

Given that X and Y are 4.5 cm apart on the map, the scale of this map is

- | | |
|------------------|-------------------|
| A 1.5 mm : 1 km. | C 150 mm : 1 km. |
| B 15 mm : 1 km. | D 1500 mm : 1 km. |

Question 52

Suppose straight sections of track were to be laid on the flat area to connect X and Y.

Of the following, the best estimate of the minimum length of train track that could be laid to connect the two cities is

- | | |
|----------|----------|
| A 35 km. | C 75 km. |
| B 55 km. | D 95 km. |

UNIT 21

Questions 53–57

Slices of meat were bought from shops in five supermarket chains and analysed. The results in Table 1 indicate the number of shops in each chain for which Quality or Safety of the slices is ‘borderline’ or ‘unacceptable’.

Quality: This refers to the total number of bacteria of all types per gram of meat.

‘Borderline’ is from 1 000 000 to 10 000 000 bacteria per gram.

‘Unacceptable’ is more than 10 000 000 bacteria per gram.

Safety: This refers to the number of certain types of bacteria per gram of meat.

‘Borderline’ is 10 to 70 *E. coli* bacteria per gram or 100 to 1000 *Staphylococcus* bacteria per gram.

‘Unacceptable’ is greater than 70 *E. coli* bacteria per gram or greater than 1000 *Staphylococcus* bacteria per gram.

Table 1

Supermarket chain	Number of shops in chain tested	Quality (number of shops)		Safety (number of shops)	
		borderline	unacceptable	borderline	unacceptable
1	36	2	0	1	0
2	36	13	11	0	0
3	73	15	4	5	1
4	36	3	1	0	1
5	6	0	5	0	0

Question 53

On the basis of both Quality and Safety, which chain is best?

- A Chain 1
- B Chain 2
- C Chain 3
- D Chain 4

Question 54

How many of the five supermarket chains had no shops with meat of unacceptable Quality and also no shops with meat of unacceptable Safety?

- A one
- B two
- C three
- D four

Question 55

Which one of the following statements is best supported by the table?

- A The chain with the most shops with borderline Quality had the most shops with unacceptable Quality.
- B The chain with the most shops with borderline Quality had the most shops with borderline Safety.
- C The chain with the most shops with unacceptable Quality had the most shops with borderline Safety.
- D The chain with the most shops with unacceptable Quality had the most shops with unacceptable Safety.

Question 56

Which one of the following is the fraction of Chain 2's shops that had borderline or unacceptable Quality?

- | | |
|-----------------|-----------------|
| A $\frac{1}{3}$ | C $\frac{2}{3}$ |
| B $\frac{1}{2}$ | D $\frac{3}{4}$ |

Question 57

A slice of meat has a total of 90 000 bacteria per gram of which 1% are *Staphylococcus* bacteria and another 1% are *E. coli* bacteria.

For this slice, there is

- A no problem with either Quality or Safety.
- B no problem with Quality but Safety is borderline.
- C no problem with Quality but Safety is unacceptable.
- D borderline Quality and borderline Safety.

UNIT 22**Question 58**

‘Discovery consists of seeing what everybody has seen and thinking what nobody has thought.’

Albert von Szent-Gyorgyi
Hungarian Biochemist

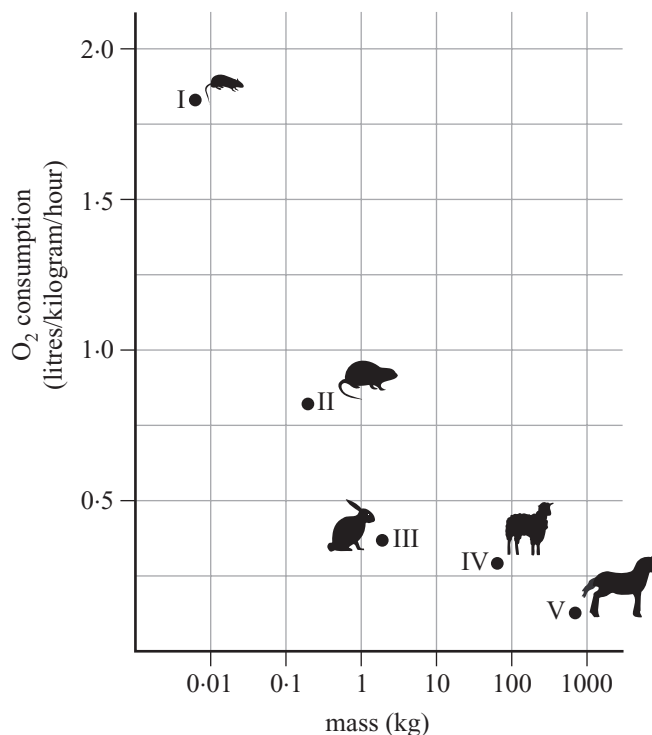
This quotation suggests that discoveries

- A depend on insight rather than novelty.
- B are rarely as original as they are thought to be.
- C are rarely as significant as they are thought to be.
- D depend on common sense rather than intelligence.

UNIT 23

Questions 59–61

The following graph shows the relationship between mass and rate of oxygen (O_2) consumption (in litres per kilogram per hour) for some animals when resting.



Question 59

According to the graph, which animal has the greatest oxygen consumption in litres per kilogram per hour?

- | | |
|------|-------|
| A I | C III |
| B II | D V |

Question 60

Which one of the following statements is most strongly supported by the graph?

In general, per kilogram of body weight, smaller animals

- A have smaller lungs compared to larger animals.
- B have larger lungs compared to larger animals.
- C require more oxygen compared to larger animals.
- D require less oxygen compared to larger animals.

Question 61

Which one of the following is the best estimate of the amount of oxygen animal IV uses in an hour?

- | | |
|-------------|--------------|
| A 5 litres | C 100 litres |
| B 25 litres | D 125 litres |