Key skills application of number
Adult numeracy
Level 2

Test Paper

YOU NEED

- This test paper
- An answer sheet
- A ruler marked in mm and cm

You may NOT use a calculator

You may use a bilingual dictionary

You may write on this paper if it helps you to work things out

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Do NOT open this paper until you are told to do so by the supervisor

THERE ARE 40 QUESTIONS IN THIS TEST

Total marks available: 40

Try to answer ALL the questions

YOU HAVE 1 HOUR 15 MINUTES TO FINISH THE TEST

INSTRUCTIONS

- Make sure your personal details are entered correctly on the answer sheet
- Read each question carefully
- Follow the instructions on how to complete the answer sheet
- At the end of the test, hand the test paper, your answer sheet and all notes to the supervisor

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REMEMBER: YOU HAVE 1 HOUR 15 MINUTES TO FINISH THE TEST

INSTRUCTIONS TO CENTRES

- **This paper must not be photocopied**

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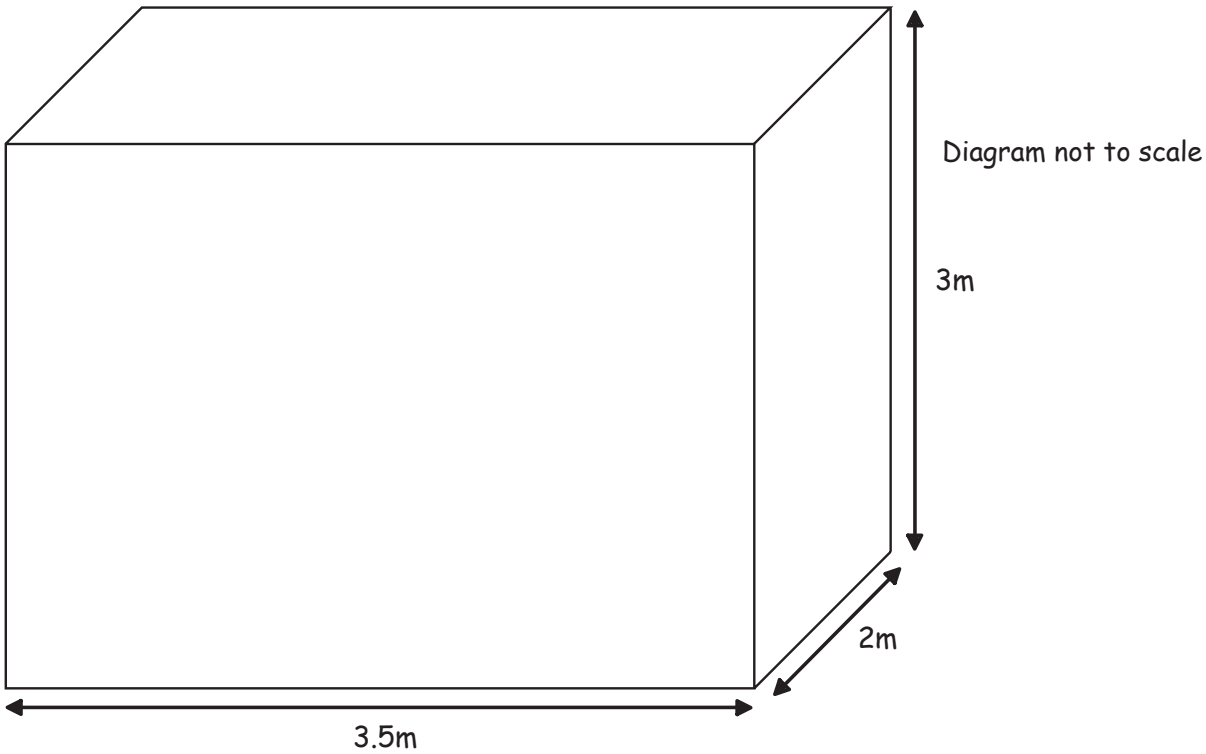
Questions 1 to 11 are about a dairy.

1 The dairy stores milk in tanks.

Diagram of a tank



What is the volume of this tank?

A $8.5m^3$

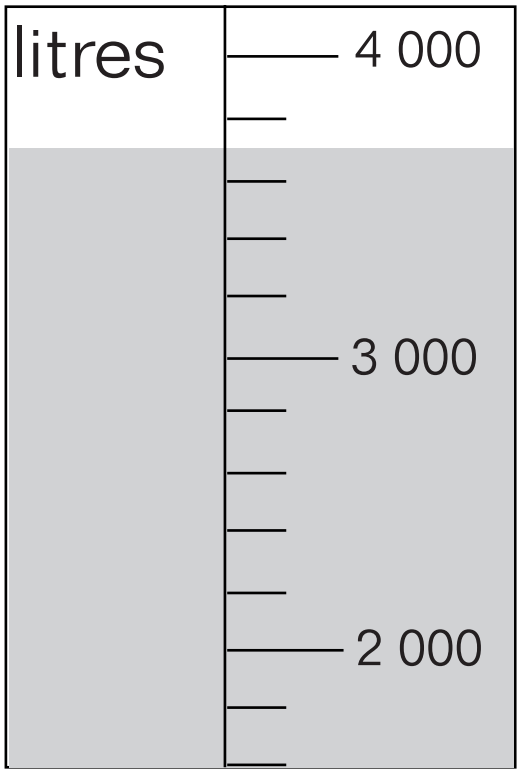
B $17.5m^3$

C $21.0m^3$

D $25.5m^3$

2 A gauge on a tank shows how much milk it contains.

Diagram of part of the gauge



An employee takes 1 500 litres of milk out of the tank.

How much milk is left in the tank after this?

A 1 850 litres

B 2 150 litres

C 2 200 litres

D 2 250 litres

3 The dairy usually bottles 12 000 litres of milk in a day.

1 litre is approximately $1\frac{3}{4}$ pints

Approximately how many one-pint bottles do they fill?

A 7 000
B 9 000
C 16 000
D 21 000

4 One day, a machine breaks down.

Instead of the usual 12 000 litres, the dairy bottles only 1 450 litres of milk.

As a fraction of the usual amount of milk, this is closest to

A $\frac{1}{7}$

B $\frac{1}{8}$

C $\frac{1}{9}$

D $\frac{1}{10}$

5 The dairy buys a new milk tanker.

The formula below gives the capacity of the tanker in litres.

$$C = 3r^2L \times 1000$$

where C = **capacity of tanker**
r = **1 metre**
L = **4 metres**

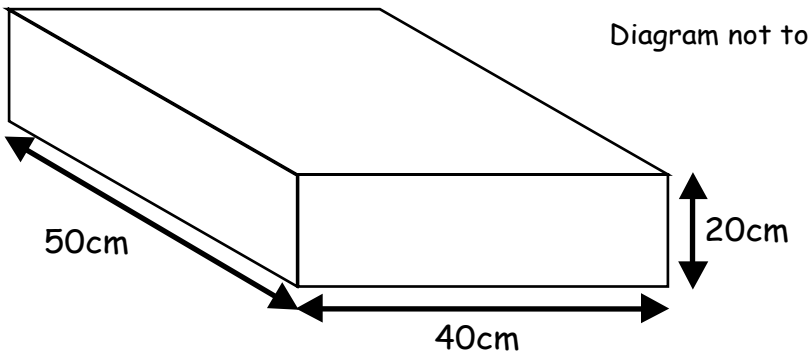
What is the capacity of the tanker?

A 12 000 litres
B 24 000 litres
C 36 000 litres
D 48 000 litres

6 A milkman uses a vehicle to deliver milk to customers.

The space for milk crates on the vehicle measures 2 metres long by 1.6 metres wide by 1 metre high.

Diagram of a milk crate



The crates fit together with no gaps between them.

What is the largest number of crates that fit in the space on the vehicle?

A 13
B 40
C 75
D 80

Questions 7 to 10 use the following information.

A milkman keeps a record of the number of bottles of milk he delivers over four weeks. He delivers on six days a week.

Bottles of milk delivered				
	Week 1	**Week 2**	**Week 3**	**Week 4**
Monday	556	531	510	516
Tuesday	536	530	568	589
Wednesday	532	582	598	530
Thursday	530	502	519	516
Friday	534	512	568	530
Saturday	539	583	597	595
Total	3227	3240	3360	3276

7 What is the difference between the mean number of bottles per delivery day in week 3 and in week 4?

A 12

B 14

C 38

D 84

8 What is the range of the number of bottles per day the milkman delivers during the four weeks?

A 30

B 39

C 93

D 96

9 The milkman needs to deliver **more than** 530 bottles per day to make a profit.

On how many days during the four weeks does he make a profit?

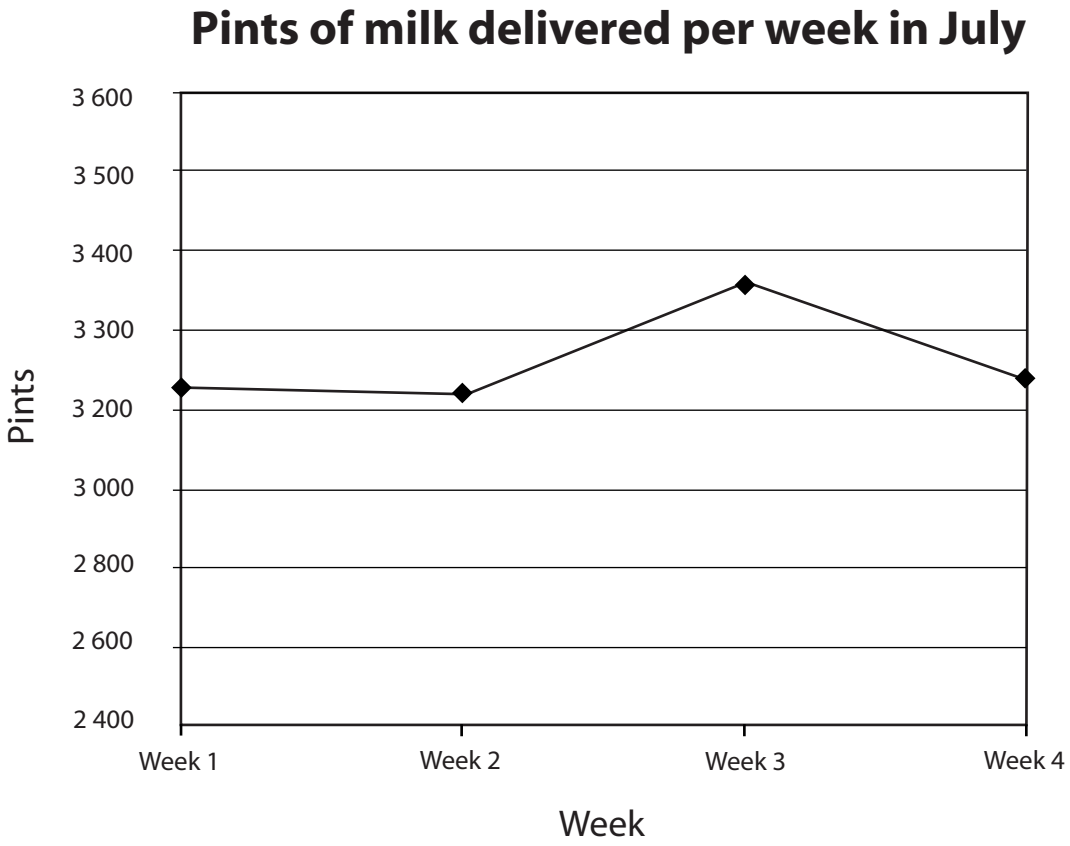
A 4

B 7

C 14

D 17

10 The dairy presents the number of pints the milkman delivers each week in July on a graph.



What is wrong with this graph?

A The axis labels are incorrect

B There are data points missing

C The title is incorrect

D The vertical scale is incorrect

11 The dairy uses the formula below to calculate the area of the wrapping paper (A) for a pack of butter.

	A = (L + H + 2) (2W + 2H + 2)
Where	L = 11 centimetres W = 6 centimetres H = 4 centimetres

What is the area of the wrapping paper?

A 39cm^2

B 59cm^2

C 214cm^2

D 374cm^2

Questions 12 to 15 are about a company that hires out security equipment.

12 The table below shows the costs of hiring security equipment.

Costs of hiring security equipment			
Equipment	**Cost of hire for one week**	**Cost of hire per additional week**	**Delivery (one payment per item)**
Floodlight	£18.00	£15.00	£10.00
Generator	£12.00	£6.00	£7.50
Security fence panel	£5.00	£3.00	£5.00
Security TV system	£35.00	£20.00	£100.00
Tool safe	£45.00	£25.00	£100.00

What is the price of hiring a generator for four weeks, including delivery?

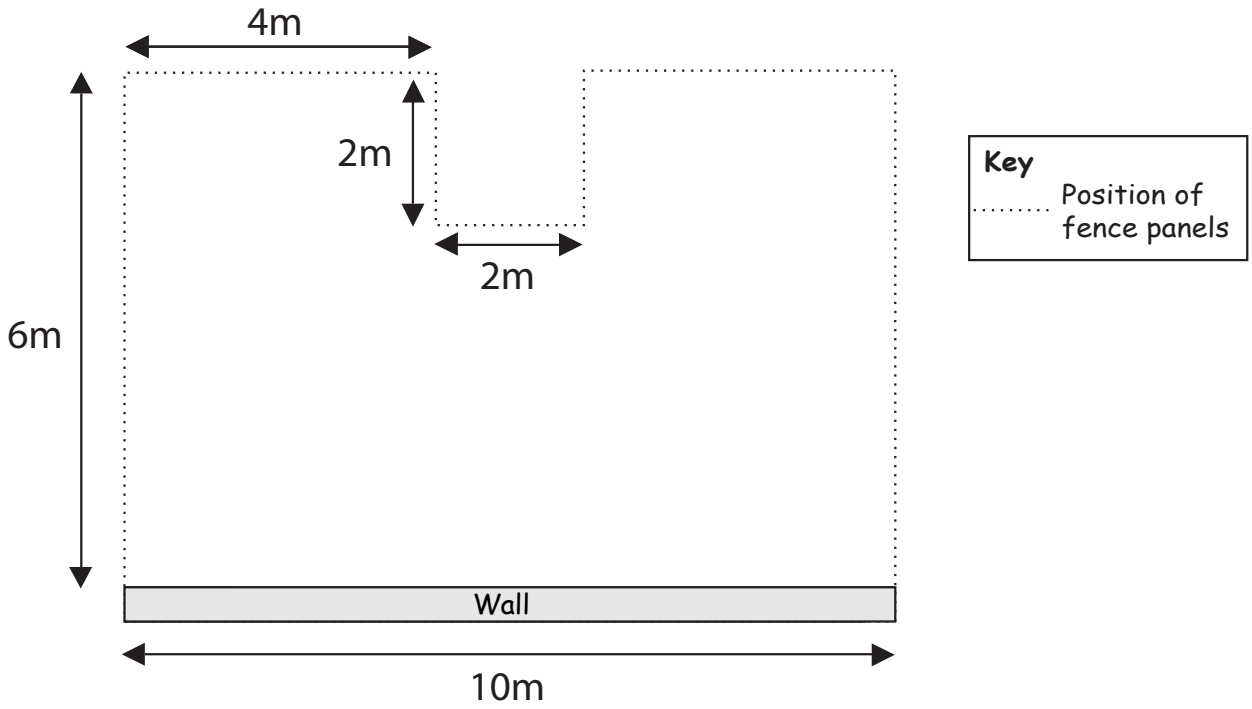
A £31.50
B £37.50
C £55.50
D £60.00

Please go on to the next page

13 A customer hires security fencing to make a secure site.

Plan of secure site

Diagram not to scale



The corners of the site are all right angles.

How many 2-metre-long fence panels does he need?

A 7

B 13

C 18

D 26

14 An employee drives to the site.

The site is a 40-minute drive from the shop.

He takes $1\frac{1}{4}$ hours to unload the fencing and $5\frac{1}{2}$ hours to install it.

He then drives back to the shop.

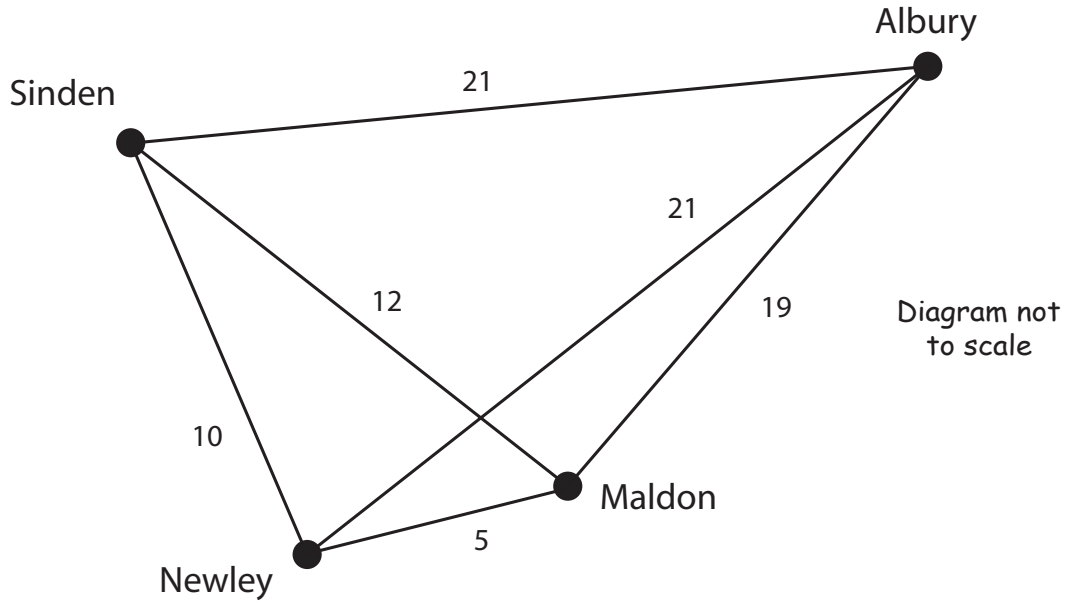
How long does he take in total?

A 7 hours 25 minutes
B 7 hours 55 minutes
C 8 hours 5 minutes
D 8 hours 10 minutes

15 A driver makes deliveries from a shop in Albury to three nearby towns.

The driver starts and finishes in Albury.

The diagram below shows the distances in miles between the towns.



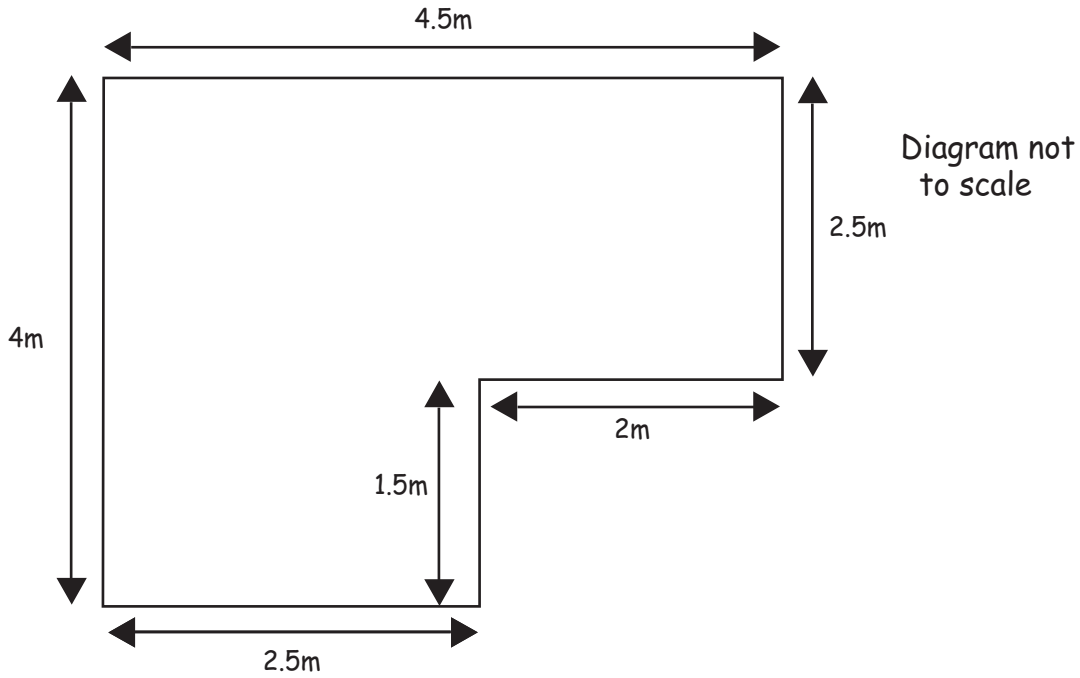
Which is the shortest route to take?

A Albury–Maldon–Newley–Sinden–Albury
B Albury–Maldon–Sinden–Newley–Albury
C Albury–Newley–Sinden–Maldon–Albury
D Albury–Sinden–Maldon–Newley–Albury

Questions 16 to 21 are about painting and furnishing a bedsit.

16 A woman paints the bedsit.

Plan of bedsit



What is the area of the ceiling?

A 11m^2

B 13m^2

C 15m^2

D 17m^2

17 The woman buys two tins of paint for the room.

The paint costs £13.95 per tin.

The shop has a special offer.

Which calculation gives the price for two tins of paint?

A $\frac{£13.95}{3} + £13.95$

B $£13.95 - \frac{£13.95}{3}$

C $£13.95 \times 2 + \frac{£13.95}{3}$

D $£13.95 \times 2 - \frac{£13.95}{3}$

18 The woman decides to buy a new blind for the window.

The window is 199 centimetres in height and 105 centimetres in width.

The table shows the price of blinds.

Price of blinds								
		Width less than						
		61cm	**91cm**	**121cm**	**152cm**	**182cm**	**213cm**	**243cm**
Height less than	**106cm**	£68	£87	£102	£122	£145	£176	£191
	137cm	£76	£100	£119	£143	£167	£196	£225
	167cm	£86	£114	£137	£166	£193	£225	£257
	198cm	£96	£129	£155	£188	£220	£256	£294
	213cm	£101	£136	£164	£200	£233	£272	£312
	243cm	£112	£152	£183	£224	£261	£304	£349

What is the price of a blind to fit the window?

A £129

B £155

C £164

D £176

19 The woman plans how to arrange the furniture using a scale drawing of the bedsit.

The scale is 1 : 50

The actual sofa is 2 metres long.

What length is the sofa on the scale drawing?

A 1cm

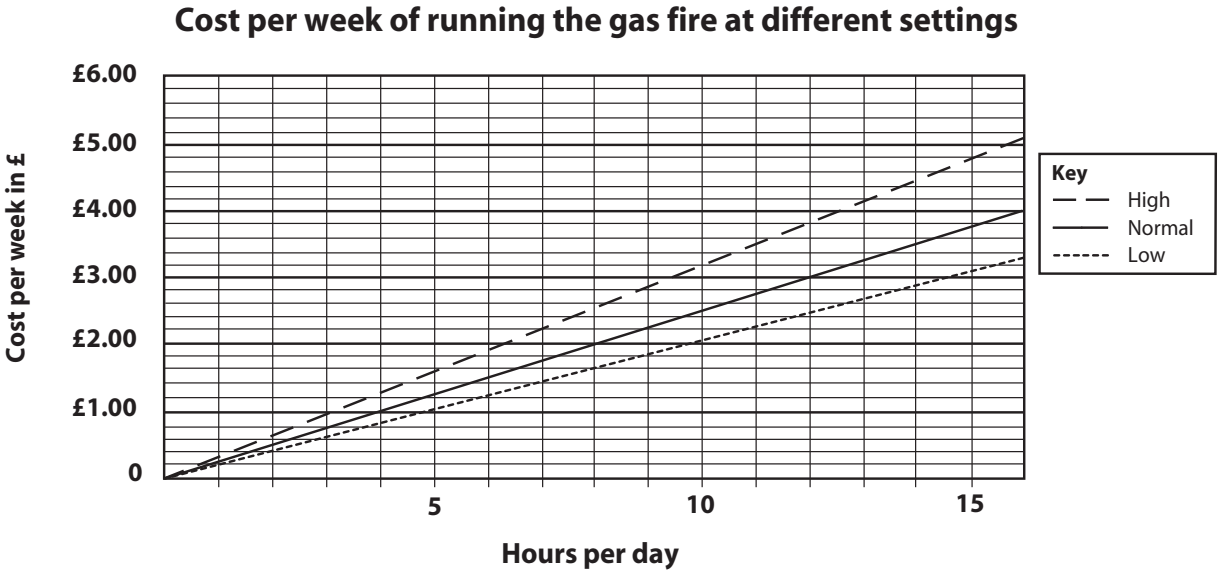
B 4cm

C 10cm

D 25cm

20 The woman buys a new gas fire for the bedsit.

This graph shows the running costs for the fire.



How much less does it cost per week to run the gas fire for six hours a day on Low setting compared to Normal setting?

A £0.15

B £0.30

C £1.50

D £2.10

21 Furniture must be at least 15 inches from the gas fire to avoid scorching.

1 inch is approximately 2.5 centimetres

Approximately how far is 15 inches in centimetres?

A 3.75cm

B 6.0cm

C 37.5cm

D 60.0cm

Questions 22 to 26 are about a beach party held to raise money for charity.

Eighty people buy tickets for the party.

22 The organisers work out the costs of the party.

Hire of barbecue	£49.60
Gas for barbecue	£12.60
Food	£475.00
Drink	£390.00
Plates, glasses, cutlery	£32.80

Tickets cost £25.

How much money do the organisers have left after paying all the costs?

A £300

B £640

C £960

D £1 040

23 The organisers buy mineral water for the party.

They buy enough for three 400ml glasses per person.

Which calculation gives the number of 1.5 litre bottles to buy?

A $\frac{3 \times 400 \times 1.5}{1\,000 \times 80}$

B $\frac{1\,000 \times 1.5}{3 \times 400 \times 80}$

C $\frac{1\,000 \times 80}{3 \times 400 \times 1.5}$

D $\frac{3 \times 400 \times 80}{1\,000 \times 1.5}$

24 The organisers also make 60 litres of fruit punch for the party.

They mix juices in the ratio

grape juice : peach juice : orange juice = 2 : 3 : 5

How much grape juice do they use?

A 6 litres

B 12 litres

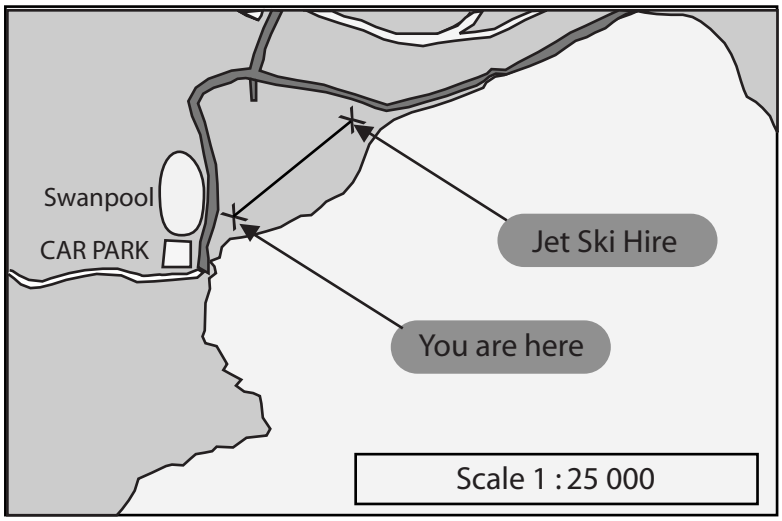
C 15 litres

D 30 litres

Please go on to the next page

Questions 25 and 26 are about some people at the party who go jet skiing.

25 A scale plan of the beach shows the position of the Jet Ski Hire.



How far is it from the point labelled 'You are here' to the Jet Ski Hire?

A 50m

B 125m

C 500m

D 1 250m

26 A jet ski uses 6 litres of fuel per hour.

The fuel tank holds 24 litres when full.

The fuel gauge on one jet ski shows that the tank is $\frac{3}{8}$ full.

How long should the jet ski run before the tank is empty?

A 40 minutes

B 54 minutes

C 90 minutes

D 150 minutes

Please go on to the next page

Questions 27 to 30 are about a library with internet access.

27 The library changes its opening times.

Old opening times	**9:00am to 5:00pm six days a week**
New opening times	**10:00am to 8:00pm six days a week**

What is the percentage increase in opening times?

A 2%
B 12%
C 20%
D 25%

Questions 28 and 29 use the following information.

An assistant records the number of internet users per week before the change in opening times and after the change in opening times.

Internet users per week	
Before change in times	After change in times
16	25
20	32
17	26
21	26
20	34
20	34
17	37
27	26
16	38
26	32

28 The mean number of users per week before the change in opening times is 20.

What is the mean number of users per week after the change?

A 26

B 31

C 32

D 34

29 What is the difference in the ranges of the number of people using the internet before and after the change in opening times?

A 2

B 3

C 6

D 9

30 The library manager collects data on the age of internet users.

She wants to make a chart or graph to show the **proportion** of internet users in different age groups.

Which is the **most** appropriate method of showing this?

A a pie chart

B a pictogram

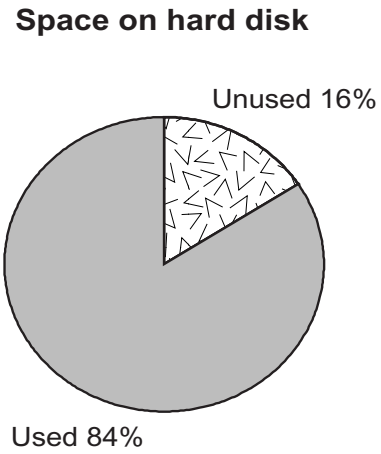
C a bar chart

D a scattergraph

Questions 31 and 32 are about the hard disk on a computer.

31 A technician checks the amount of space on the hard disk.

The computer shows the following chart.



Approximately what fraction of the disk is unused?

A $\frac{1}{5}$

B $\frac{1}{6}$

C $\frac{1}{8}$

D $\frac{1}{16}$

32 The disk on the computer has a capacity of 650 megabytes.

The technician installs an additional disk with a capacity of 5.2 gigabytes.

Use the approximation **1 gigabyte = 1 000 megabytes**

What is the total disk capacity on the computer?

A 702 megabytes

B 1 170 megabytes

C 5 850 megabytes

D 52 650 megabytes

Questions 33 to 35 are about a dog owner.

The dog owner has two dogs.

33 The owner buys a bag of dry food weighing 30 kilograms.

Each dog eats 350 grams of the food per day.

The owner calculates that the bag of food will last the dogs just over 6 weeks.

Which calculation checks this result?

A $\frac{1000}{6 \times 7 \times 2 \times 350} = 30$

B $\frac{350}{6 \times 7 \times 2 \times 1000} = 30$

C $\frac{6 \times 7 \times 2 \times 1000}{350} = 30$

D $\frac{6 \times 7 \times 2 \times 350}{1000} = 30$

34 The owner has insurance for vet fees.

Last year he paid £90 per year for **each** dog.

This year he gets a 15% reduction.

How much does the owner pay this year for insurance for the two dogs?

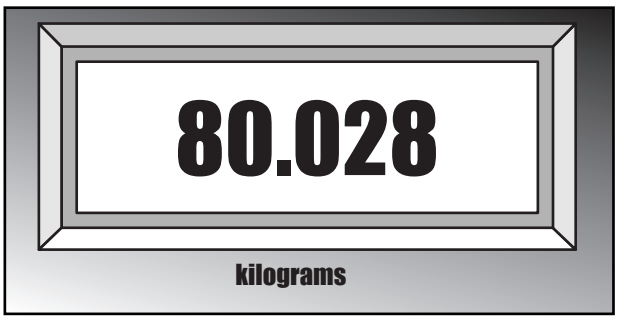
A £126
B £150
C £153
D £168

35 The vet checks the weight of one of the dogs.

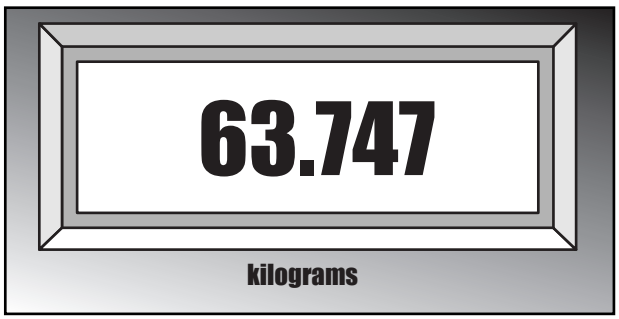
The vet weighs the owner carrying the dog, and then again without the dog.

The diagram below shows the weights on the scales.

Owner and dog



Owner alone



What is the weight of the dog to the nearest **half of a kilogram**?

A 16.0kg
B 16.2kg
C 16.3kg
D 16.5kg

Questions 36 to 40 are about a small business.

A man opens a small garage with a shop selling newspapers and groceries.

36 When the shop opens, there is £50 in the till.

At the end of the day, the man records the money in the till.

Money in till	
Note/coin	Number
£20	3
£10	6
£5	4
£2	5
£1	7
50p	5
20p	6
10p	16
5p	7
2p	6
1p	11

How much **more** money is there in the till at the end of the day than when the shop opened?

A £88.88

B £112.88

C £162.88

D £212.88

37 The table below shows the profit or loss the business makes in the first six months.

Month	Profit or loss(–)
March	–£4 678
April	–£1 856
May	£1 083
June	–£234
July	£1 981
August	£2 083

What is the total profit or loss for the six months?

A £1 621 loss

B £1 621 profit

C £11 915 loss

D £11 915 profit

38 The businessman wants to find his average monthly overheads. He does not want the average to be distorted by any unusually high or low monthly overheads.

Which is the **most** appropriate measure to use?

A the median

B the mean

C the mode

D the range

39 The man sells petrol at 75.9 pence per litre.

He checks the price of petrol in 10 other garages in the area.

Price of petrol in pence per litre									
75.9	76.3	74.6	74.1	73.9	75.9	73.9	74.1	75.9	74.4

How much more is the man's selling price than the mode of prices in the 10 other garages?

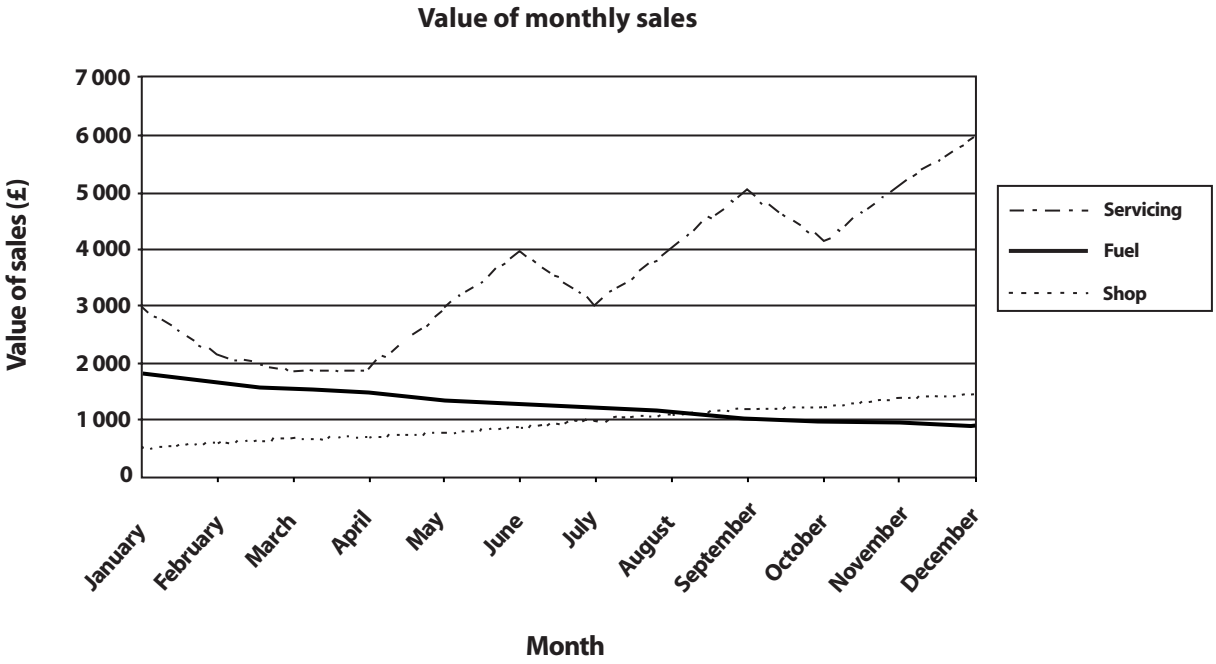
A 0.0 pence

B 1.0 pence

C 1.4 pence

D 2.0 pence

40 The man makes a graph to show the value of sales from servicing, fuel and the shop.



The graph shows that over the year

A the value of servicing sales doubled, but the value of fuel sales halved

B the value of servicing sales grew every month

C the value of shop sales increased by a greater amount than the value of servicing sales

D the price of servicing increased, but the price of fuel decreased

END OF TEST