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QUALIFICATIONS,
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ASSESSMENT AUTHORITY
FOR WALES



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

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

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 6 are about a man's diet and health.

1 The table shows the sodium content of some foods.

Food	Sodium content of 100 grams of food	Sodium content of one serving
Bacon	2.0g	0.50g per rasher
Bread	0.5g	0.25g per slice
Brown sauce	1.2g	0.20g per tablespoon

The man makes a bacon sandwich using

- two rashers of bacon
- one slice of bread and
- one tablespoon of brown sauce

What is the total sodium content of the bacon sandwich?

- A 5.70g
- B 3.70g
- C 1.45g
- D 0.95g

2 In one week the man eats food with a total sodium content of 14.0 grams. The recommended amount of sodium for a person is 10.5 grams per week. He works out that he has eaten 3.5 grams of extra sodium in the week.

Approximately, what is the extra sodium as a percentage of the recommended amount?

- A 3%
- B 4%
- C 25%
- D 33%

Questions 3 and 4 use the following information.

The man starts eating a healthier diet.

The table below shows his daily calorie intake for the first week of the diet.

Daily calorie intake for first week of diet							
Day	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Calories	1910	1820	1850	1910	1820	1820	2030

3 What is the range of his daily calorie intake for the first week of this diet?

- A 120 calories
- B 210 calories
- C 1820 calories
- D 1910 calories

4 His median daily calorie intake in the week before his diet was 2 240 calories.

What is the difference between this and his median calorie intake in the first week of his diet?

- A 330 calories
- B 360 calories
- C 390 calories
- D 420 calories

5 The man weighs himself every Monday morning.
He wants to make a graph or chart to update each week to show how his weight is changing.

The most appropriate graph or chart for him to use is a

- A pie chart
- B scatter graph
- C flow chart
- D line graph

- 6** The man uses an exercise machine with a display that shows energy used. After he exercises, the display reads 105 kilojoules. He converts this to kilocalories.

1 kilocalorie is approximately 4.2 kilojoules

Approximately how many kilocalories are there in 105 kilojoules?

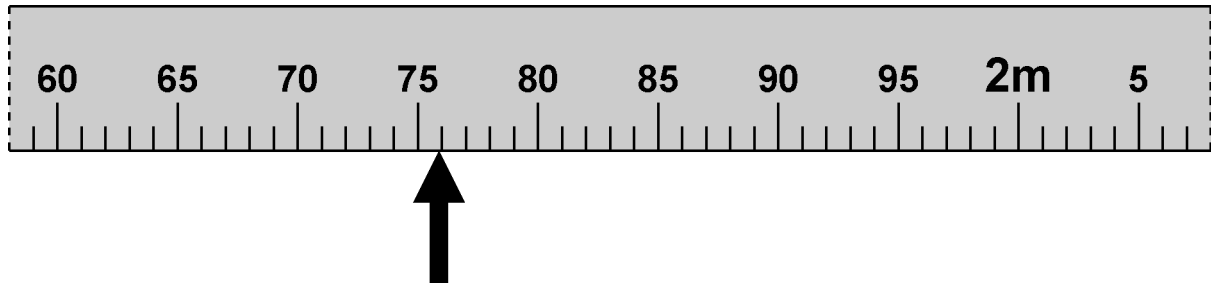
- A** 25
- B** 44
- C** 250
- D** 441

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Questions 7 to 14 are about the owner of a horse and a pony.

7 The owner measures the length of her horse.



What is the measurement shown on the tape measure to the nearest 0.1m?

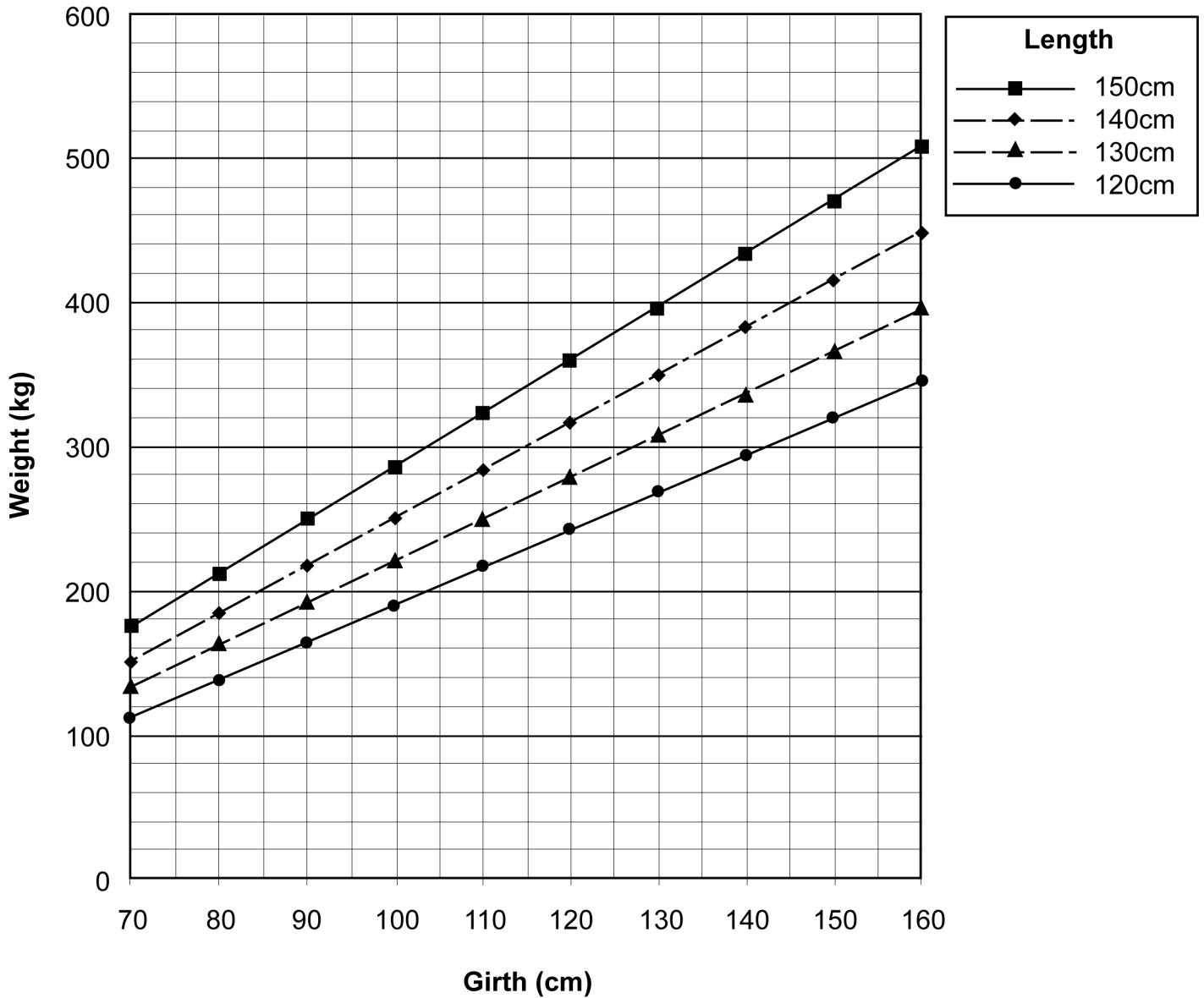
- A 1.7m
- B 1.75m
- C 1.76m
- D 1.8m

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8

The owner uses this graph to estimate the weight of her pony. The estimate is based on the pony's length and girth (measurement around the middle of its body).

Graph to show the weight of a pony of known length and girth



The pony has a girth of 120cm and a length of 150cm.

According to the graph, the weight of the pony is

- A 320kg
- B 330kg
- C 360kg
- D 380kg

9

This table shows how much food horses need.

Weight of horse (kg) up to	Weight of food per day (kg) for different amounts of work	
	Less than 4 hours work	4 or more hours work
300	1.8	2.4
350	2.1	2.8
400	2.4	3.2
450	2.7	3.6
500	3.0	4.0
plus for each extra 100kg above 500kg	0.5	0.7

The horse weighs 700 kilograms.

It does 4 hours work per day.

How much food does the horse need per day?

- A** 4.0kg
- B** 4.7kg
- C** 5.4kg
- D** 5.6kg

10

The owner puts a water container in the field for the horse and pony.

The container is a cuboid, 2.0 metres long and 0.7 metres wide.

It holds water to a depth of 0.5 metres.

1 cubic metre = 1 000 litres

How much water does the container hold?

- A** 700 litres
- B** 1 700 litres
- C** 2 400 litres
- D** 3 200 litres

11

She keeps bales of horse bedding in a storage area 1.7 metres wide and 2.1 metres long.

This diagram shows a bale of horse bedding

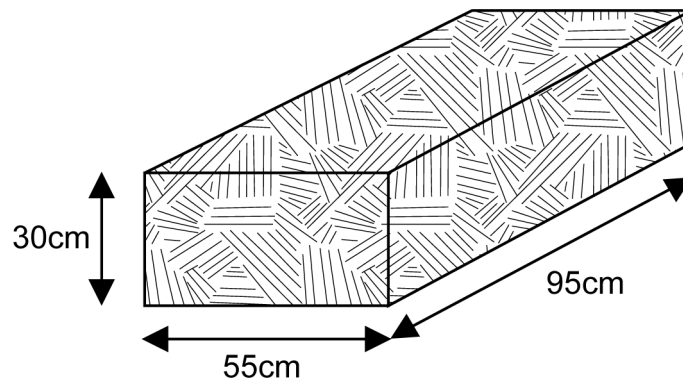


Diagram not to scale

She stacks them all the same way round, as shown in the diagram of the storage area below.

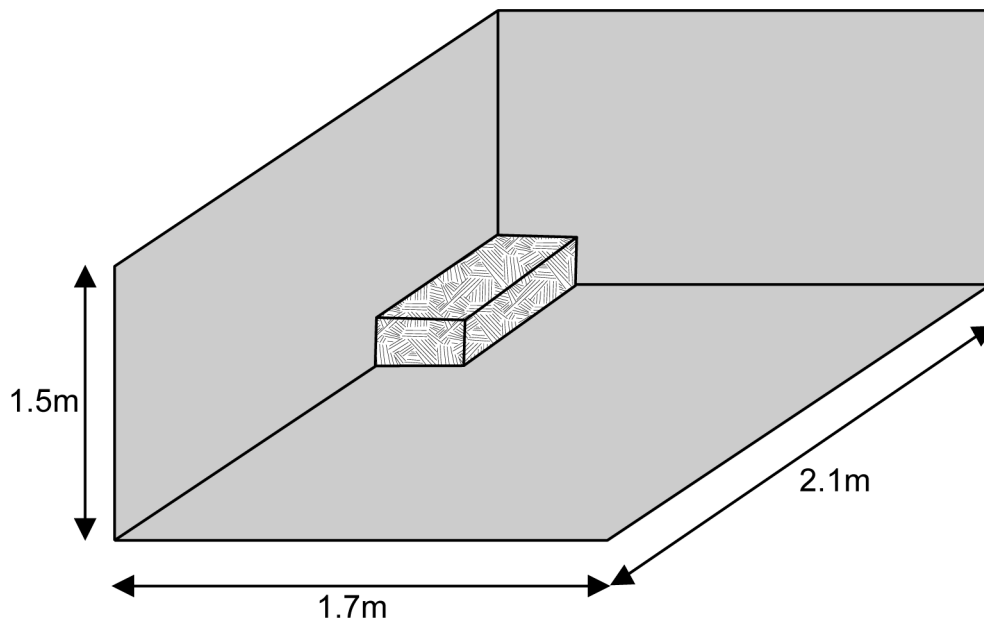


Diagram not to scale

The maximum height of the stacks is 1.5 metres.

What is the maximum number of bales that fit into the storage area?

- A 10
- B 16
- C 25
- D 30

12 The owner takes the horse and pony to a horse show.

The table below gives the time and place of each competition.

Start time	Ring Number		
	1	2	3
9:30			Gymkhana Chase-me-charlie Sack Race
10:00	Welsh Mountain Ponies Best Brood Mare		Gymkhana Bending Race Potato Race Musical Sacks
10:30	Welsh Mountain Ponies Best Foal	Joker Jumping Horses 148cm and under Rider 16 years and under	Show Jumping Horses over 148cm Rider 16 years and under
11:00	Welsh Mountain Ponies¹ Best Yearling		
11:30	Welsh Mountain Ponies Best 2-year-old Colt	Joker Jumping Horses 148cm and under Rider over 16 years old	Show Jumping Horses over 148cm Open
12:00	Welsh Mountain Ponies Best Mare or Gelding 3 years old and over		
12:30		Show Jumping Horses 148cm and under Rider 16 years and under	Joker Jumping Horses over 148cm Rider 16 years and under
13:00	Fancy Dress Rider 16 years and under		
13:30		Show Jumping Horses 148cm and under Open	Joker Jumping Horses over 148cm Rider over 16 years old

Her son enters the horse into the Joker Jumping competition.

The horse's height is 149cm.

Her son is 16 years old.

In which ring and at what time does his competition start?

- A** Ring 2 at 10:30
- B** Ring 2 at 11:30
- C** Ring 3 at 12:30
- D** Ring 3 at 13:30

Question 13 and 14 use the following information.

In the Joker Jumping competition, riders score points when they jump over fences successfully. The fences increase in difficulty. The number of points riders score is the same as the number of the fence.

After 10 fences there is a Joker fence, which riders can jump if they want to.

This is the score-card for the first six riders

	Fence number/Points											
Fence number	1	2	3	4	5	6	7	8	9	10	Joker	Final Total
Points	1	2	3	4	5	6	7	8	9	10		
Rider 1	X	X	✓	✓	X	✓	✓	✓	X	✓	✓	
Rider 2	✓	✓	✓	✓	X	X	✓	✓	✓	✓	✓	
Rider 3	X	✓	X	✓	X	✓	✓	✓	✓	✓	-	
Rider 4	X	✓	X	✓	✓	X	X	✓	X	X	X	
Rider 5	X	✓	✓	✓	✓	X	✓	✓	X	✓	✓	
Rider 6	✓	X	✓	X	✓	✓	X	✓	✓	✓	-	

Key ✓ = jumped successfully X = knocked down - = did not attempt

13 How many riders knocked down **more than three** fences?

- A 1
- B 2
- C 3
- D 5

14 The rules for working out the Final Total in the competition are

<p>Joker Jumping Rules</p> <p>Joker fence jumped successfully..... Total points are doubled Joker fence knocked down..... Total points are halved Joker fence not attempted..... Total points stay the same</p>
--

Which calculation shows how to work out the Final Total for Rider 1?

- A $3 + 4 + 6 + 7 + 8 + 10 \div 2$
- B $3 + 4 + 6 + 7 + 8 + 10 \times 2$
- C $(3 + 4 + 6 + 7 + 8 + 10) \div 2$
- D $(3 + 4 + 6 + 7 + 8 + 10) \times 2$

Questions 15 to 18 are about a man setting up an office for a small business.

- 15** The man takes out a loan of £2 500
To pay back the loan, he must make 12 monthly payments.
He chooses between the following monthly payments

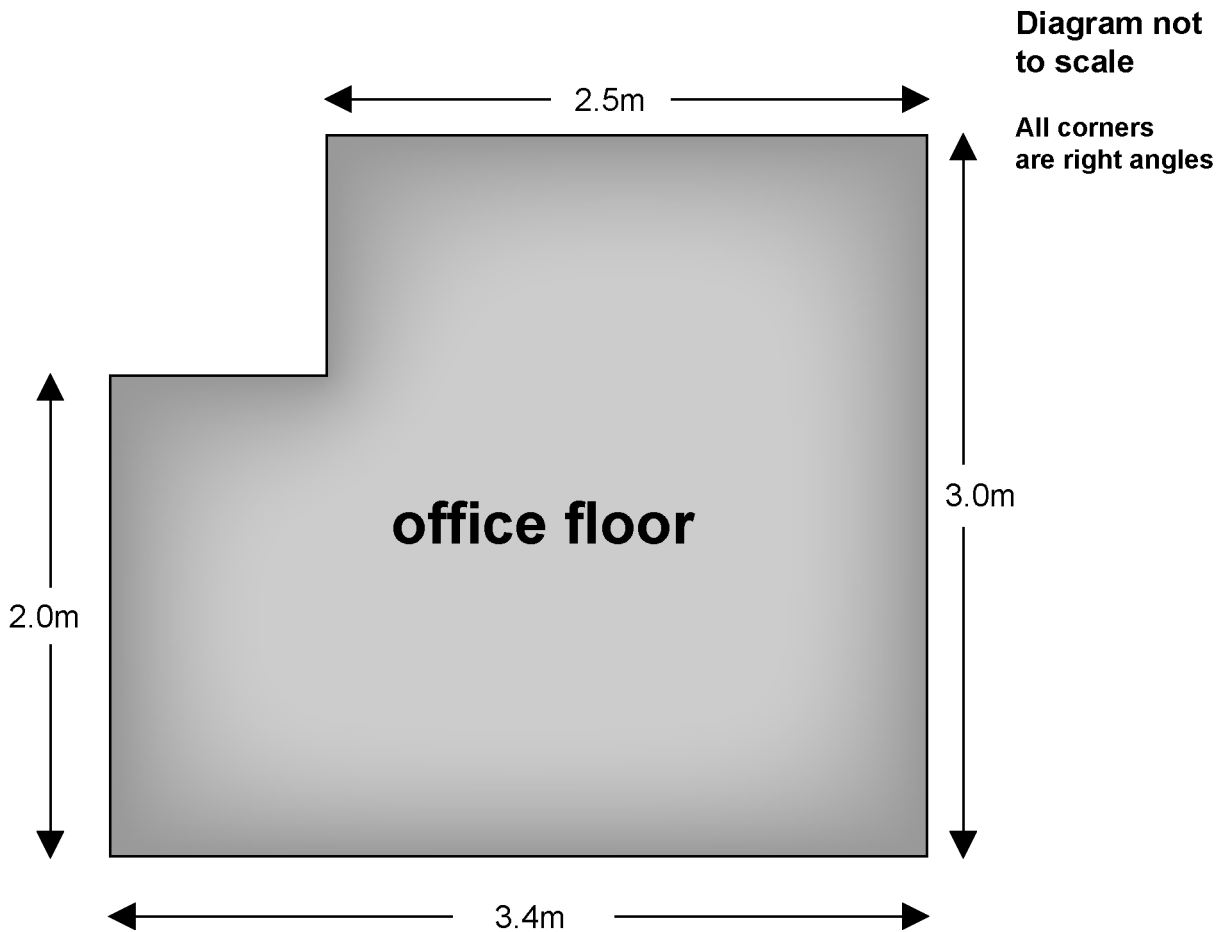
- £257.20 **with** insurance
- or
- £218.11 **without** insurance

Over the full length of the loan, the total cost of the insurance is

- A** £459.08
- B** £469.08
- C** £469.28
- D** £470.28

Please go on to the next page

Questions 16 and 17 use the following diagram.



16 The man makes an accurate scale drawing of the office floor using a scale of 1 : 20

What is the length of the longest wall on the scale drawing?

- A 17mm
- B 68mm
- C 170mm
- D 680mm

17 What is the area of the office floor?

- A 9.3m^2
- B 10.9m^2
- C 12.8m^2
- D 14.3m^2

18 The man buys office furniture costing £504.00
He pays a 20% deposit and the rest in 10 equal monthly instalments.
Each monthly instalment is

- A** £39.60
- B** £40.32
- C** £40.48
- D** £48.40

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Questions 19 to 24 are about a group of cadets preparing for an expedition.

- 19 The cadets do practice walks to improve their fitness.
This table shows the distance of each practice walk

Practice walk	A	B	C	D	E	F	G	H	I	J
Distance in kilometres	12	14	15	14	18	18	21	18	24	26

This table shows the walks they plan for the expedition

Expedition walk	A	B	C	D
Distance in kilometres	17	21	25	25

What is the difference between the mean distance of their practice walks and the mean distance of the expedition walks?

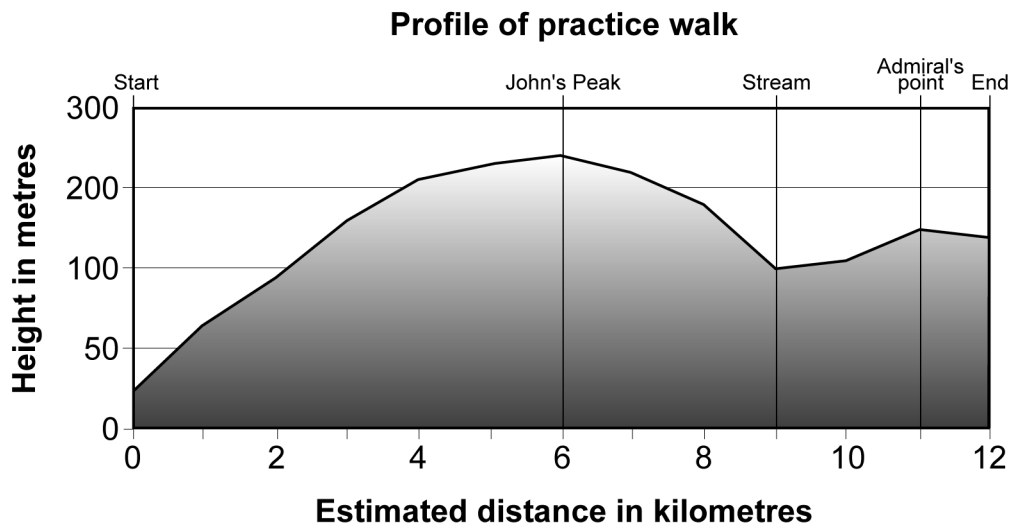
- A 4km
- B 5km
- C 6km
- D 7km

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20

The cadets plan a practice walk on a route with an estimated distance of 12 kilometres.

One cadet draws a chart to show a profile of the height of the hills in metres along the route of the walk.



What is wrong with the chart?

- A The scale on the vertical axis is incorrect.
- B The label on the vertical axis is incorrect.
- C It needs more numbers on the horizontal axis.
- D The label on the horizontal axis is incorrect.

21

On a map, one section of a walk measures 20 centimetres.
The map has a scale of 1 : 25 000

What is the actual distance of this section of the walk?

- A 1.25km
- B 5.00km
- C 8.00km
- D 12.50km

22

To calculate the time needed to walk up hills, the cadets use the formula below

$$T = 15D + \frac{H}{10}$$

where **T** is the time in minutes
D is the distance on level ground in kilometres
H is the height climbed in metres

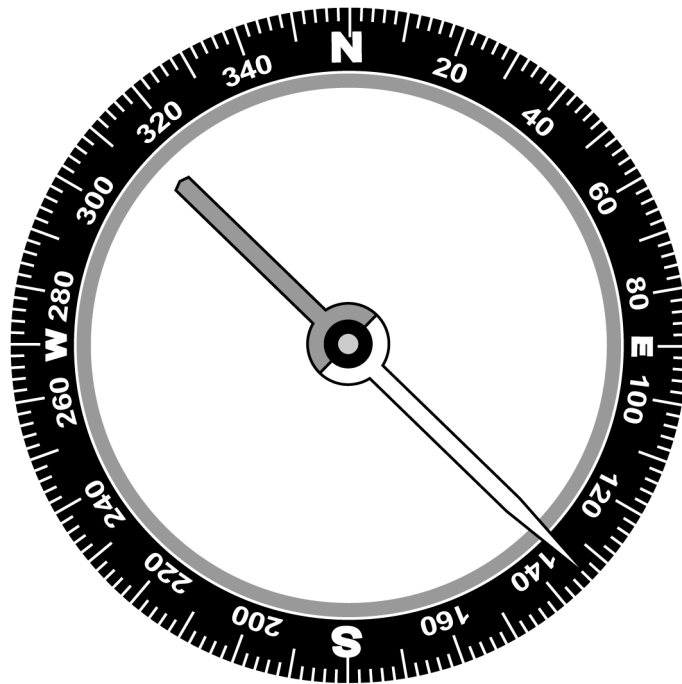
On one section of a walk the cadets will cover 5 kilometres on level ground, and climb 350 metres.

The time needed for this section is

- A 37 minutes
- B 55 minutes
- C 60 minutes
- D 110 minutes

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- 23 The cadets walk in the direction shown by the pointer on their compass.



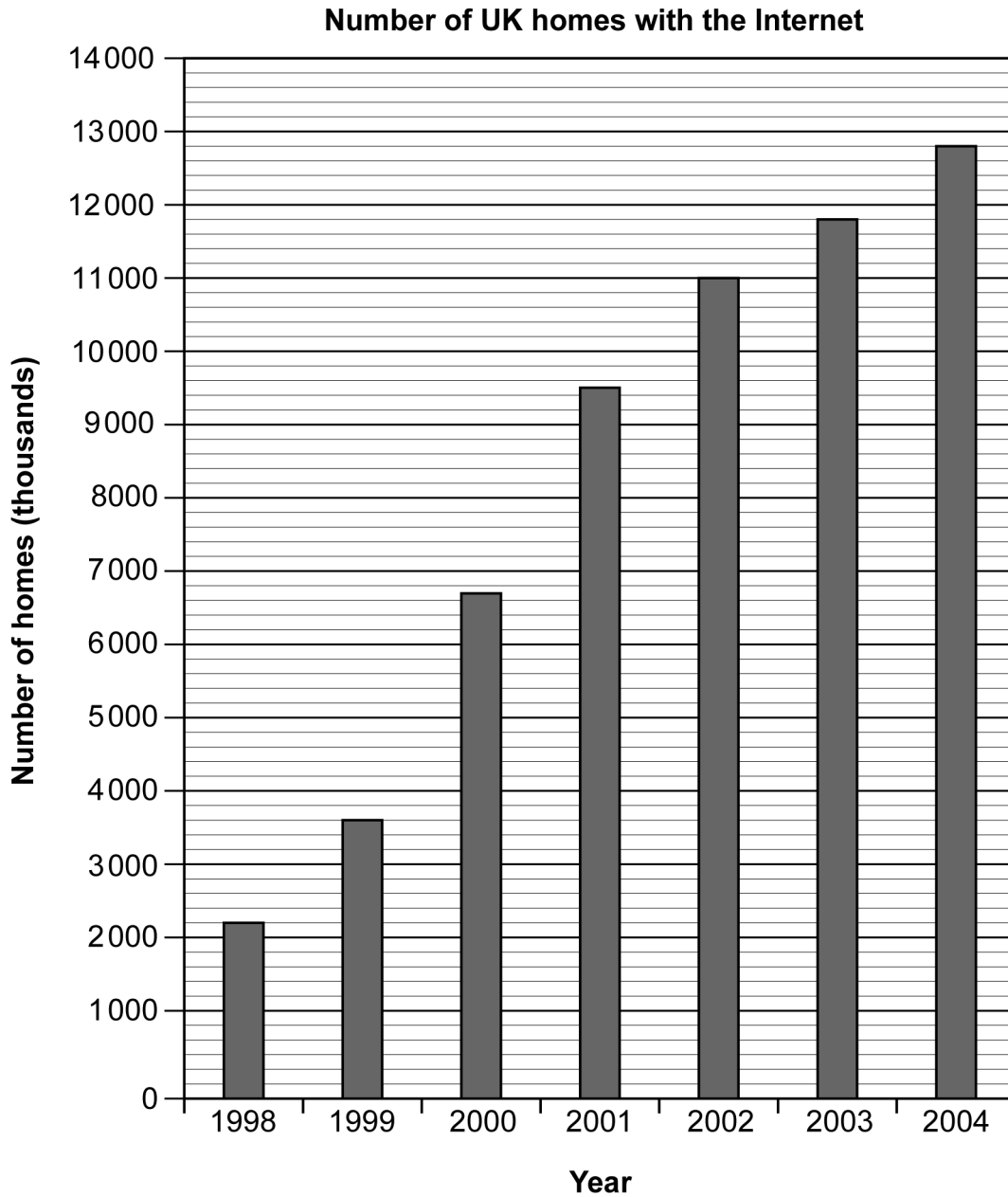
To follow a new course, they subtract 16 degrees from this reading.

What is the new course reading?

- A 118 degrees
B 116 degrees
C 111 degrees
D 101 degrees
- 24 The six cadets buy the food for their expedition. They each buy four 'Day ration packs' costing £12.99 each. They receive a 5% discount on the total cost.
- Which of these calculations gives the total cost after the discount?
- A $6 \times 4 \times 12.99 \times \frac{100}{5}$
B $6 \times 4 \times 12.99 \times \frac{5}{100}$
C $6 \times 4 \times 12.99 - 6 \times 4 \times 12.99 \times \frac{100}{5}$
D $6 \times 4 \times 12.99 - 6 \times 4 \times 12.99 \times \frac{5}{100}$

Questions 25 to 30 are about a woman finding information about Internet access in the UK.

25 The woman finds a chart of the number of UK homes with the Internet.



The chart shows that between 1999 and 2004 the number of UK homes with the Internet grew by

- A 9 100 000
- B 9 200 000
- C 9 600 000
- D 10 600 000

Questions 26 and 27 use the following information.

A report says that this year there are 15 million UK properties with the Internet. Of these, 3.75 million use a broadband connection and the rest use a dial-up connection.

26 This year the ratio of Internet users on a broadband connection to Internet users on a dial-up connection is

- A 1 : 3
- B 1 : 4
- C 3 : 4
- D 4 : 3

27 The report estimates that the number of properties using a broadband connection will grow by a further 520 thousand next year.

If the report is correct, the number of properties using broadband Internet in the UK next year will be

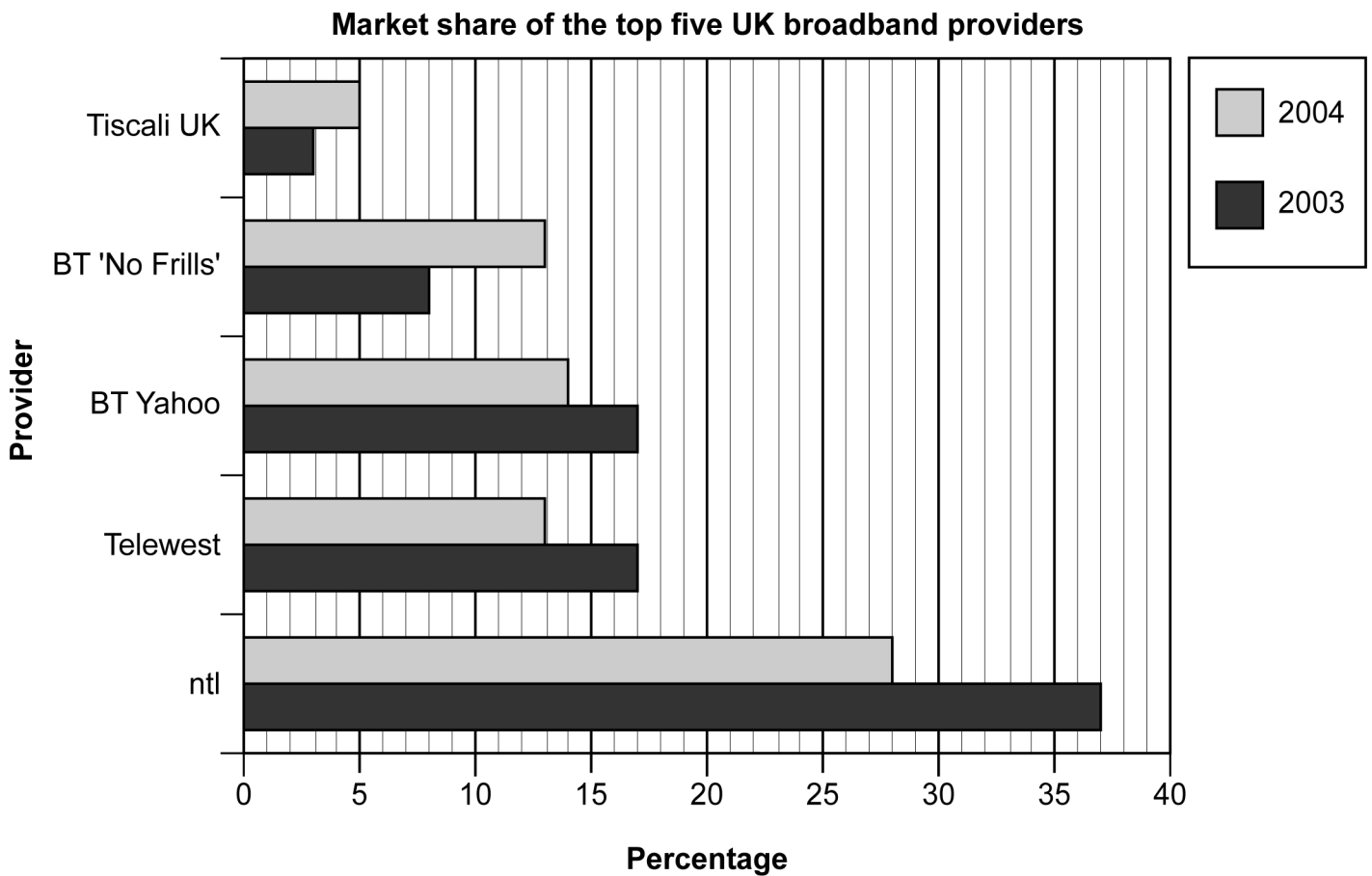
- A 895 000
- B 3 802 000
- C 4 270 000
- D 38 020 000

28 There are 5 591 telephone exchanges in the UK. Of these, 1 411 do not take broadband connections.

Which of these is closest to the proportion of telephone exchanges in the UK that **do** take broadband connections?

- A 2 in every 3
- B 3 in every 4
- C 4 in every 5
- D 5 in every 6

29 The woman looks for information on UK broadband providers. She finds the chart below.



The chart shows that

- A most of the top five broadband providers increased their market share from 2003 to 2004
- B of the top five broadband providers, Tiscali UK had the largest proportional increase in market share from 2003 to 2004
- C the market share of the largest provider in 2003 fell by half in 2004
- D the market share of the smallest provider in 2003 doubled in 2004

- 30** The woman compares the cost of Broadband in the UK with other countries. In France, one company charges 19.80 euros per month.

$$\text{£}2 = 3 \text{ euros}$$

What is this in pounds?

- A** £8.60
- B** £12.90
- C** £13.20
- D** £29.70

Please go on to the next page

Questions 31 to 34 are about a woman shopping in a supermarket.

31 The woman compares the prices of organic and non-organic foods.

Prices of foods per kilogram (kg)		
Food	Organic	Non-organic
Chicken	£4.98	£2.14
Potatoes	£0.77	£0.39

She wants to buy

- a 1.5kg chicken
- 5kg of potatoes

How much **more** do these items cost at organic prices compared to non-organic prices?

- A £5.16
- B £6.16
- C £6.26
- D £6.66

32 Non-organic eggs cost 96p for six.
Organic eggs cost £1.60 for six.

The woman works out the extra cost for organic eggs as a fraction of the non-organic price.

This fraction is

- A $\frac{2}{5}$
- B $\frac{2}{3}$
- C $\frac{3}{5}$
- D $\frac{3}{2}$

- 33** The supermarket gives customers reward points. Customers can exchange their points for gifts.

Reward points
You get 2 points for every £5 you spend

The woman needs 30 more points to obtain a gift.

To get these points, she needs to spend

- A** £12
- B** £33
- C** £50
- D** £75

- 34** The supermarket introduces a new offer.
Customers can exchange 25 reward points for 6 Air Miles.
The woman works out that she can exchange 600 points for 144 Air Miles.

Which of these calculations checks the number of Air Miles?

- A** $144 \div 6 \times 25 =$ number of points exchanged
- B** $144 \div 6 \div 25 =$ number of points exchanged
- C** $144 \times 6 \div 25 =$ number of points exchanged
- D** $144 \times 6 \times 25 =$ number of points exchanged

Questions 35 to 40 are about a diving club.

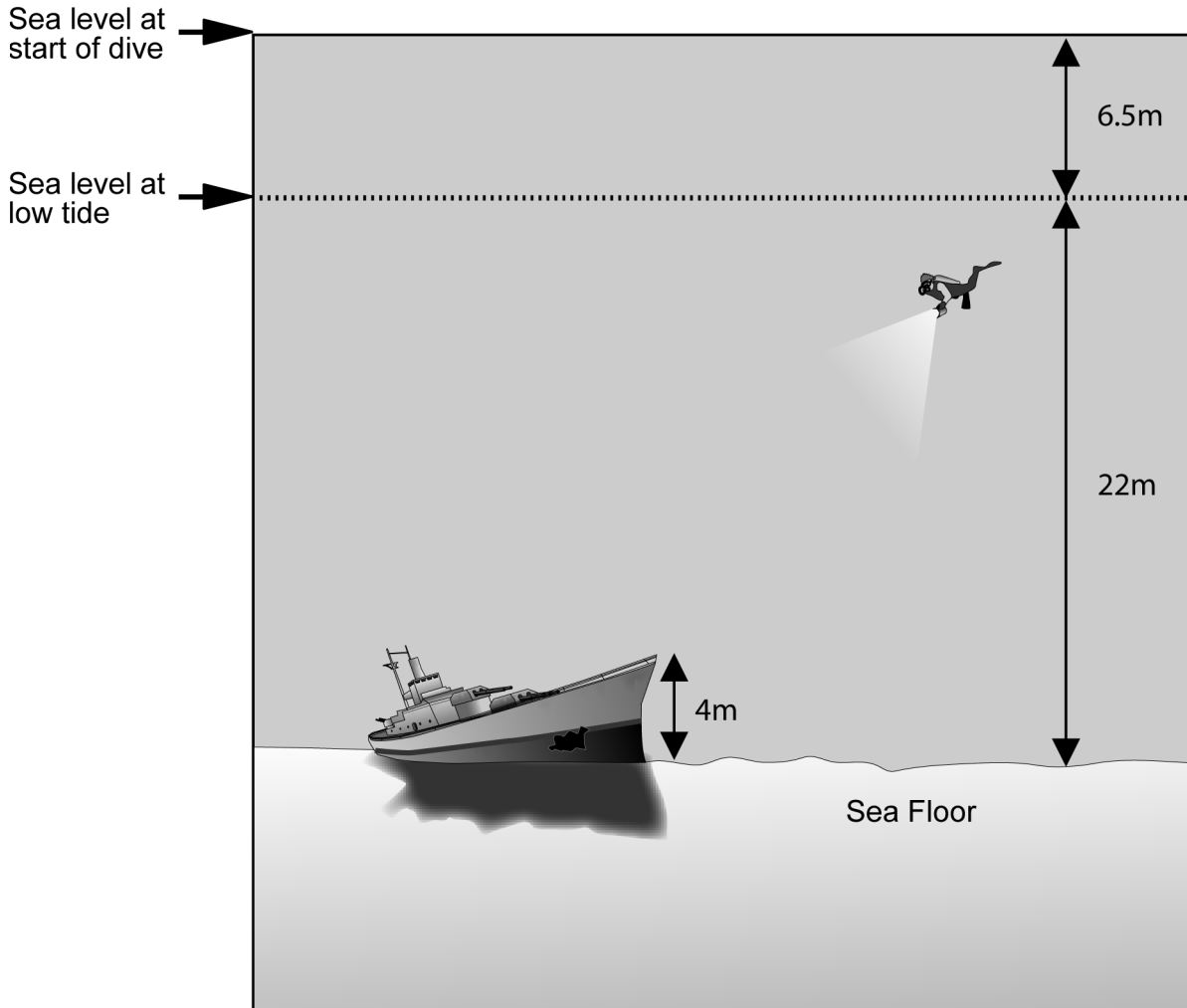
35 A group of club members plan a dive to a shipwreck.
High tide is at 1405.
They want to start the dive $1\frac{1}{2}$ hours before high tide.
It takes them 20 minutes to reach the diving area by boat.
What is the latest time they need to set off?

- A 1215
- B 1235
- C 1255
- D 1315

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- 36 The shipwreck is on the sea floor, which is 22 metres below sea level at low tide.

Diagram not to scale



They want to get to the deck of the ship, which is 4 metres above the sea floor.

At the start of the dive, the sea is 6.5 metres above the sea at low tide.

What is the depth of the dive to reach the deck?

- A 11.5m
- B 19.5m
- C 24.5m
- D 32.5m

37

A new club member orders some diving equipment. He rounds the price of each item to the nearest £10 to estimate the total cost.

The list below shows the equipment and prices.

Dry Suit	£396	Torch	£22
Buoyancy Jacket	£174	Fins	£34
Dive Cylinder	£128	Mask	£16
Dive Computer	£159		

His estimate of the total cost is

- A £890
- B £930
- C £960
- D £970

38

An experienced diver helps the new member to find the amount of air he needs for a dive by using the formula

$$L = \frac{75T}{2} \left(\frac{D}{10} + 1 \right)$$

where
L is the amount of air in litres
T is the length of time of dive in minutes
D is the maximum depth of dive in metres

He plans a dive lasting 40 minutes, going to a maximum depth of 20 metres.

How much air does he need for this dive?

- A 1 503 litres
- B 3 001 litres
- C 3 150 litres
- D 4 500 litres

Questions 39 and 40 use the following information.

The diving club secretary keeps a record of the number of members who go on each dive. The table below shows the records for 2003 and 2004.

Number of members on each dive														Total number of dives		
2003	3	5	9	4	3	8	3	3	4	7	6					11
2004	8	8	7	12	7	8	7	5	8	5	6	7	5	5	7	15

39 What is the difference between the modal numbers of members per dive in 2003 and in 2004?

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

40 How much larger is the range of the numbers on each dive in 2004 compared to 2003?

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

End of test

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