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FOR WALES



Key skills application of number Adult numeracy Level 2

Monday 23 February 2004

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

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Ref: AoN/L2/2.1/P5

Questions 1 to 4 are about half-marathons.

- 1 A runner competes in nine half-marathons in one year.
The table shows his times.

1 hour 52 minutes
1 hour 45 minutes
1 hour 45 minutes
2 hours 8 minutes
1 hour 40 minutes
1 hour 38 minutes
2 hours 15 minutes
1 hour 25 minutes
1 hour 28 minutes

What is the range of his times, in minutes?

- A 24
B 40
C 47
D 50
- 2 The entry fee for a half-marathon is £8
A French runner enters.
The rate of exchange is £1 = 1.65 Euros.
How much is the entry fee in Euros?
- A 4.85
B 8.65
C 12.80
D 13.20

3 A bus to a half-marathon costs £243.65

The bus takes 43 people.

An organiser rounds each number to the nearest 10 to estimate the approximate cost per person.

Which calculation should the organiser do?

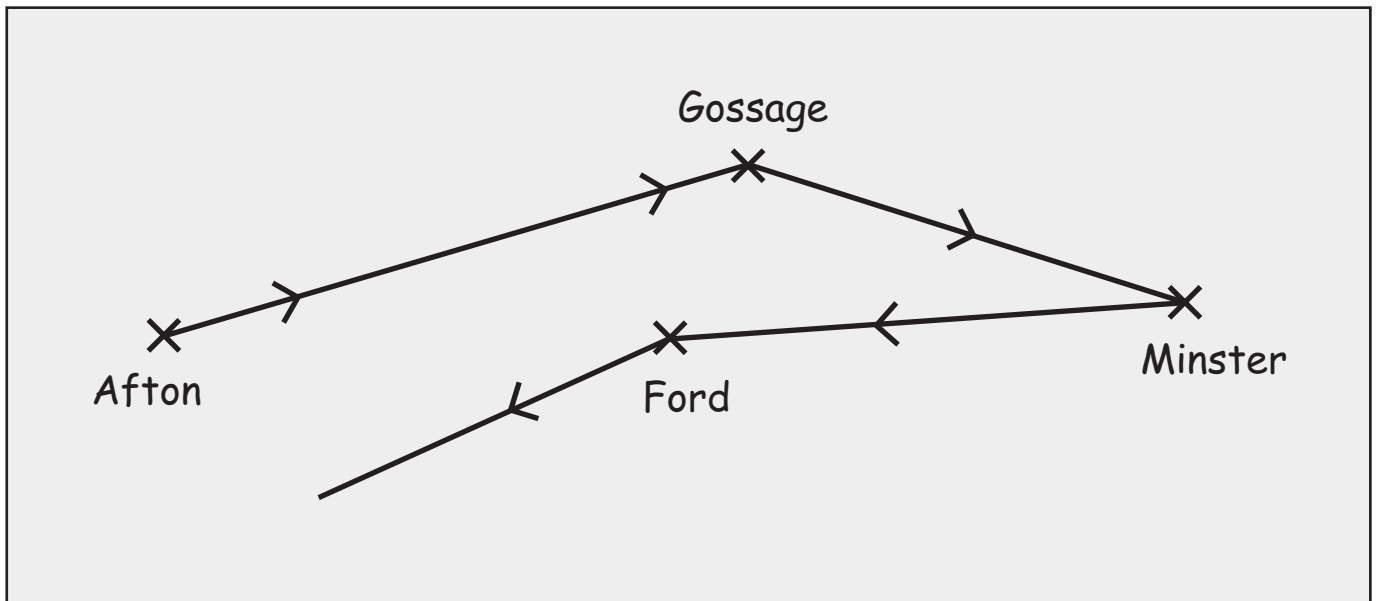
A $240 \div 40 = \text{£}6.00$

B $243 \div 43 = \text{£}5.70$

C $250 \div 40 = \text{£}6.30$

D $250 \div 50 = \text{£}5.00$

4 The map shows part of the half-marathon course.



Scale:
1cm = 0.5 miles

What is the distance, in miles, from Afton to Gossage?

A 4

B 6

C 8

D 16

Questions 5 and 6 are about a cinema.

- 5 The manager of a cinema records the number of people attending the early showing at the cinema from Monday to Friday.

Day of the week	Mon	Tues	Wed	Thurs	Fri
Number of adults	150	174	120	143	193
Number of children	40	64	39	52	83

What is the mean number of adults attending the early showing?

- A 120
 - B 150
 - C 156
 - D 193
- 6 Tickets cost £4.50 for adults and £2 for children.
- How much money does the cinema receive from ticket sales for the early showing on Thursday and Friday?
- A £1614.50
 - B £1647
 - C £1782
 - D £2 119.50

Questions 7 to 12 are about a summer fair.

7 The summer fair committee orders 500 leaflets.

The printer calculates the cost of printing the leaflets using the formula

$$C = 27 + 0.02 \times n$$

Where C is the cost in pounds

n is the number of leaflets

How much does it cost to print the leaflets?

- A £28
- B £37
- C £127
- D £1027

8 One member of the committee makes circular name tags 60 millimetres in diameter from sheets of card.

The sheets of card measure 20 centimetres by 30 centimetres.

What is the maximum number of name tags she can make from each sheet of card?

- A 5
- B 8
- C 10
- D 15

- 9 A committee member makes scones for the refreshment stall.
These are the ingredients from the recipe she uses.

225g self-raising flour 40g butter 150ml milk 5ml baking powder 1 pinch of salt These ingredients will make 8 scones
--

She buys ingredients for 144 scones.

How many 250g packs of butter does she buy?

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

- 10 Cream teas cost £1.25 at the fair.

The committee serves 45 cream teas.

They collect £56.25

How can they check this amount is correct?

- A $\frac{56.25}{45}$
- B $\frac{125}{56.25}$
- C $\frac{45}{1.25}$
- D $\frac{125}{45}$

- 11** On the prize draw stall there is a prize for every number ending in a zero or a five between 1 and 99

How many prizes are there in total?

- A 18
- B 19
- C 20
- D 21

- 12** The table shows how much money each stall raised.

Books	Prize Draw	White Elephant	Coconut Shy	Cakes	Toys	Refreshments
£30.35	£150.50	£45.60	£73.90	£83.50	£26.40	£65.40

What is the range of amounts raised?

- A £35.05
- B £73.90
- C £124.10
- D £150.50

Questions 13 to 16 are about employees in a factory.

A union representative collects information on the name, gender, age and wages of employees.

The factory employs 469 men and 231 women.

13 What is the approximate ratio of men to women employees?

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

14 The union representative wants to compare age with weekly wages.

What is the **most** effective way to display this information?

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

- 15** The union representative looks at the information collected on the ages of employees.

This shows that 176 employees are under 25

Approximately what fraction of the employees are under 25?

- A $\frac{1}{3}$
- B $\frac{1}{4}$
- C $\frac{1}{5}$
- D $\frac{1}{7}$

- 16** The union representative wants to find the modal age group of the employees.

Which is the **most** effective way of finding the modal age group?

- A a bar chart plotting each employee's age against name
- B a line graph showing each employee's age against name
- C a frequency table with employees' ages grouped in intervals of ten
- D a scatter graph with employees' ages grouped in intervals of ten

Questions 17 to 20 are about organising a club meeting in Waterford Hall.

17 The table shows the costs of hiring the hall.

Waterford Hall Available for private hire	
Monday to Friday	£15 per hour
Saturday	£35 per hour
Equipment hire	£25 extra per booking
Deposit: 15% of total cost	

The secretary books the hall for three hours on a Saturday with equipment hire.

Which calculation gives the total deposit?

- A $(25 + 35) \times 3 \times \frac{100}{15}$
- B $(25 + 35) \times 3 \times \frac{15}{100}$
- C $(35 \times 3 + 25) \times \frac{100}{15}$
- D $(35 \times 3 + 25) \times \frac{15}{100}$

18 The club committee makes 14 litres of a lemon drink for the refreshments.

They mix lemon concentrate and water in the ratio 2 : 5

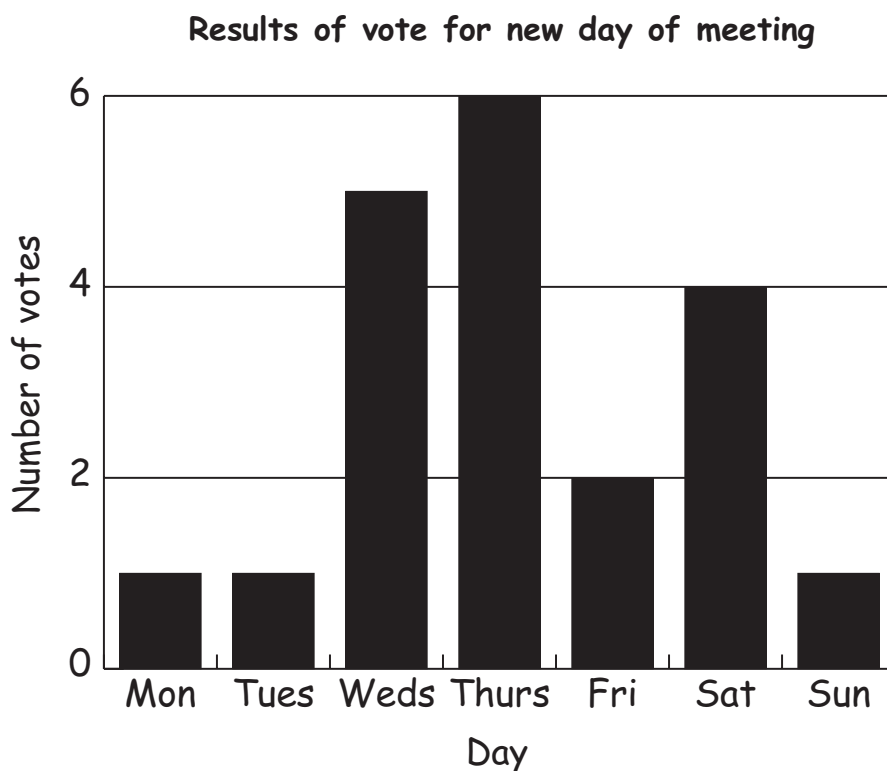
How many litres of lemon concentrate do they use?

- A 2
- B 3
- C 4
- D 5

19 The committee increases the membership fee from £12 to £15 per year.
What is the percentage increase?

- A 3%
- B 20%
- C 25%
- D 80%

20 There is a vote to change the day of the monthly meeting.
The bar chart shows the results of the vote.



What percentage of voters chose Thursday?

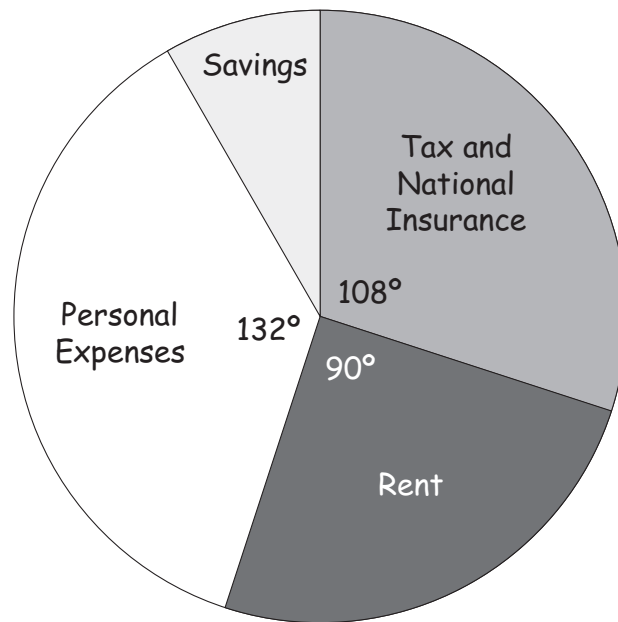
- A 25%
- B 30%
- C $33\frac{1}{3}\%$
- D 60%

Questions 21 to 24 are about a woman's finances.

The woman earns £240 per week.

The pie chart shows how she spends her wages.

Weekly Spending



21 What fraction of her total income is the woman's savings?

- A $\frac{1}{30}$
- B $\frac{1}{12}$
- C $\frac{1}{8}$
- D $\frac{3}{10}$

22 How much of the woman's £240 per week wages is spent on Tax and National Insurance?

- A £30
- B £72
- C £108
- D £162

23 The woman spends £39 per week on travel.

Approximately how much does she spend on travel in three years?

- A £1 440
- B £2 000
- C £4 500
- D £6 000

24 The woman decides to borrow £3 000 and pay it back over four years.

The table shows the loan repayments.

Amount borrowed (£)	Monthly repayment with insurance (£)	Monthly repayment without insurance (£)	Repayment period (months)
2 000	96.34	92.42	24
2 000	51.20	49.15	48
3 000	141.90	138.12	24
3 000	108.34	105.56	36
3 000	72.80	68.56	48
5 000	235.40	230.63	24
5 000	120.20	114.06	48

The woman cannot decide whether to make monthly repayments with or without insurance.

How much more expensive is the monthly repayment with insurance than without it?

- A £2.05
- B £2.78
- C £3.78
- D £4.24

Questions 25 to 30 are about a club diving holiday in the Scilly Isles.

Members of a diving club go on holiday to the Scilly Isles for a week.

They travel from Penzance to St Mary's in the Scilly Isles by ferry or helicopter and return the same way.

25 Eleven of the adult members travel both ways by helicopter.

The table shows the fares.

Helicopter - Adult Fares		
One way	Return	Day Return
£49	£98	£65
Group discount 10% for 12 or more people		

What is the total cost of the return fare for the 11 adults?

- A £971
- B £978
- C £1078
- D £1176

26 They need to get to St Mary's before 5:15pm.

They look at the timetable.

Flight No.	Depart Penzance	Arrive St Mary's
BS846	0920	0940
BS1110	1110	1130
BS2240	1205	1225
BS2750	1510	1530
BS5022	1635	1655
BS1700	1700	1720
BS1755	1755	1815

Which is the flight number of the latest flight they can catch?

- A BS5022
- B BS2750
- C BS1510
- D BS1700

27 The holiday is in August.

A second group of club members travel by ferry on a Saturday.

They look at the ferry timetable.

Ferry Timetable Penzance to St Mary's		
Monday to Friday daily	29 th April to 4 th October	Depart Penzance 0915
Saturdays only	25 th May to 8 th June	Depart Penzance 0630 & 1345
	15 th June to 31 st August	Depart Penzance 1100
Sailing time approximately 2 hours 40 minutes		

At what time do they expect to arrive in St Mary's?

- A 0910
- B 1155
- C 1340
- D 1625

28 The diving club hires a boat for 12 club members to go diving for six days.

The normal cost of hiring the boat for six days is £660

Diving clubs receive a 10% discount.

What is the cost per person with the discount?

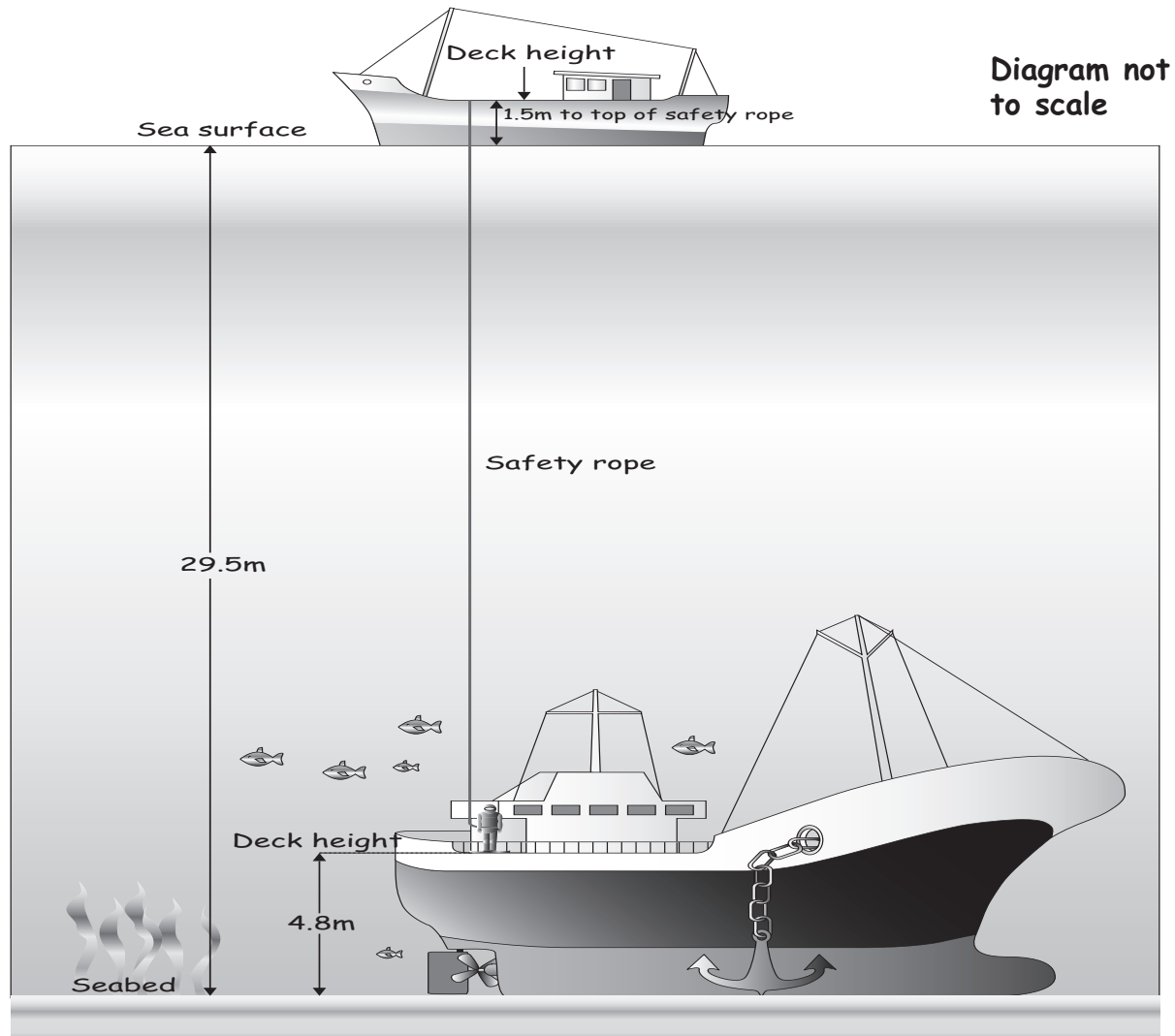
- A £49.50
- B £55.00
- C £60.50
- D £66.00

29 At the dive site, the seabed is -29.5 metres from the sea surface.

A diver dives onto the deck of a sunken ship.

The deck of the sunken ship is 4.8 metres above the seabed.

The deck on the diving boat is 1.5 metres above the sea surface.



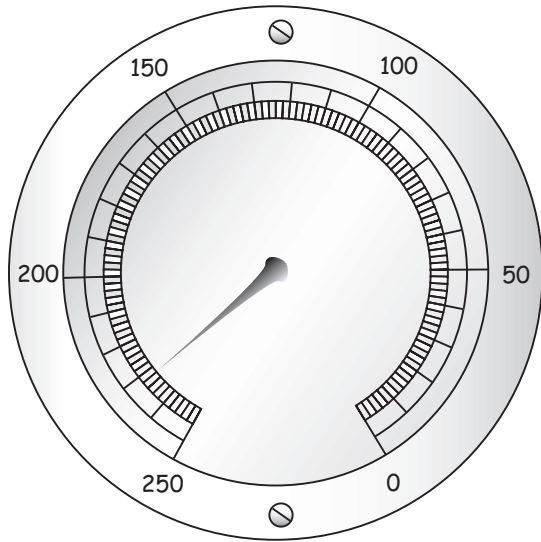
A safety rope is attached to the diver from the deck of the diving boat.

What is the distance in metres from the deck of the diving boat to the deck of the sunken ship?

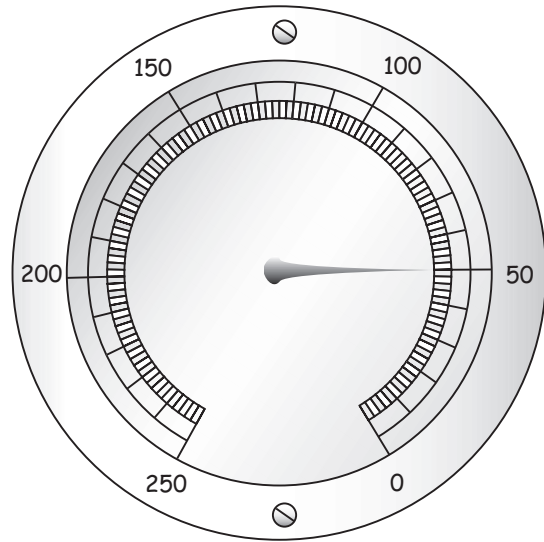
- A 23.2m
- B 26.2m
- C 32.8m
- D 35.8m

30 A diver measures the amount of air he uses under water with an air gauge. The diagram shows the air gauge before and after the dive.

Air gauge before dive



Air gauge after dive



How much air does the diver use to the nearest 10 units?

- A** 180 units
- B** 182 units
- C** 230 units
- D** 280 units

Questions 31 to 33 are about a health centre.

31 A doctor surveys the ages of his patients at his morning surgery for three days. He draws a table and collects this data.

	Monday	Tuesday	Wednesday
Males	41, 76, 90, 19, 7	5, 25, 82, 45, 2, 53, 75, 52	52, 37, 4, 59, 82, 62
Females	63, 79, 21, 33, 24, 16, 71	45, 62, 73, 35, 22, 18, 3	83, 33, 94, 14, 88, 2

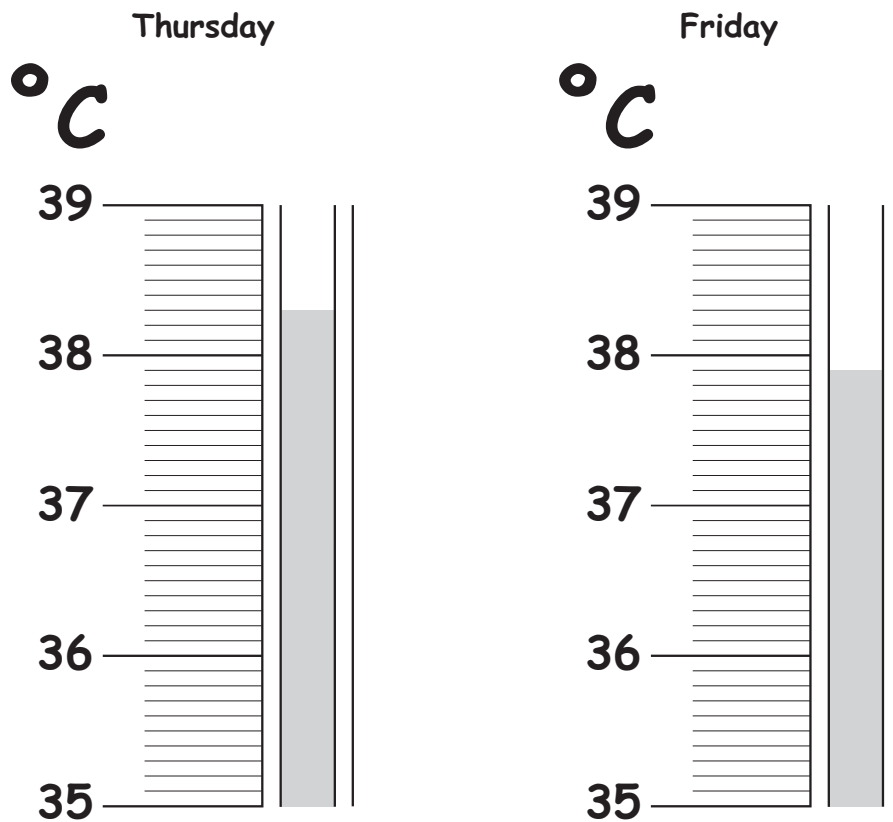
He uses the data to construct a frequency table for the three days.

	Under 20	20 to 39	40 to 60	Over 60
Males	5	2	6	6
Females	5	6	1	7

There is an error in the frequency table. Which entry is wrong?

- A Female under 20
- B Female 20 to 39
- C Female 40 to 60
- D Female over 60

32 A doctor takes a patient's temperature on two mornings.
The diagram shows part of the thermometer.

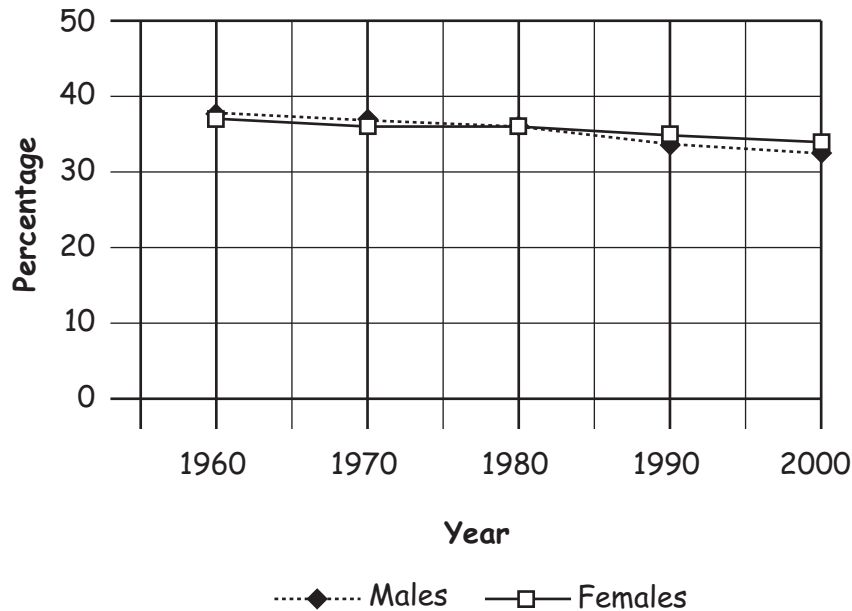


What is the difference in temperature, in degrees Celsius, from Thursday to Friday?

- A 0.4°C
- B 0.6°C
- C 1.4°C
- D 1.6°C

33 On the waiting room wall there is a graph showing the percentages of patients who smoke.

Percentage of male and female patients who smoke



What is the trend shown in the graph?

- A There is a trend towards patients not smoking
- B There is a trend towards an increase in female patients smoking
- C There is a trend towards an increase in male patients smoking
- D There is a trend towards male patients giving up smoking and female patients increasing smoking

Questions 34 to 36 are about a planned new theatre.

34 An architect makes a scale model of the planned new theatre.

The scale of the model is 1 : 50

The width of the theatre will be 40 metres.

What is the width of the model?

A 8cm

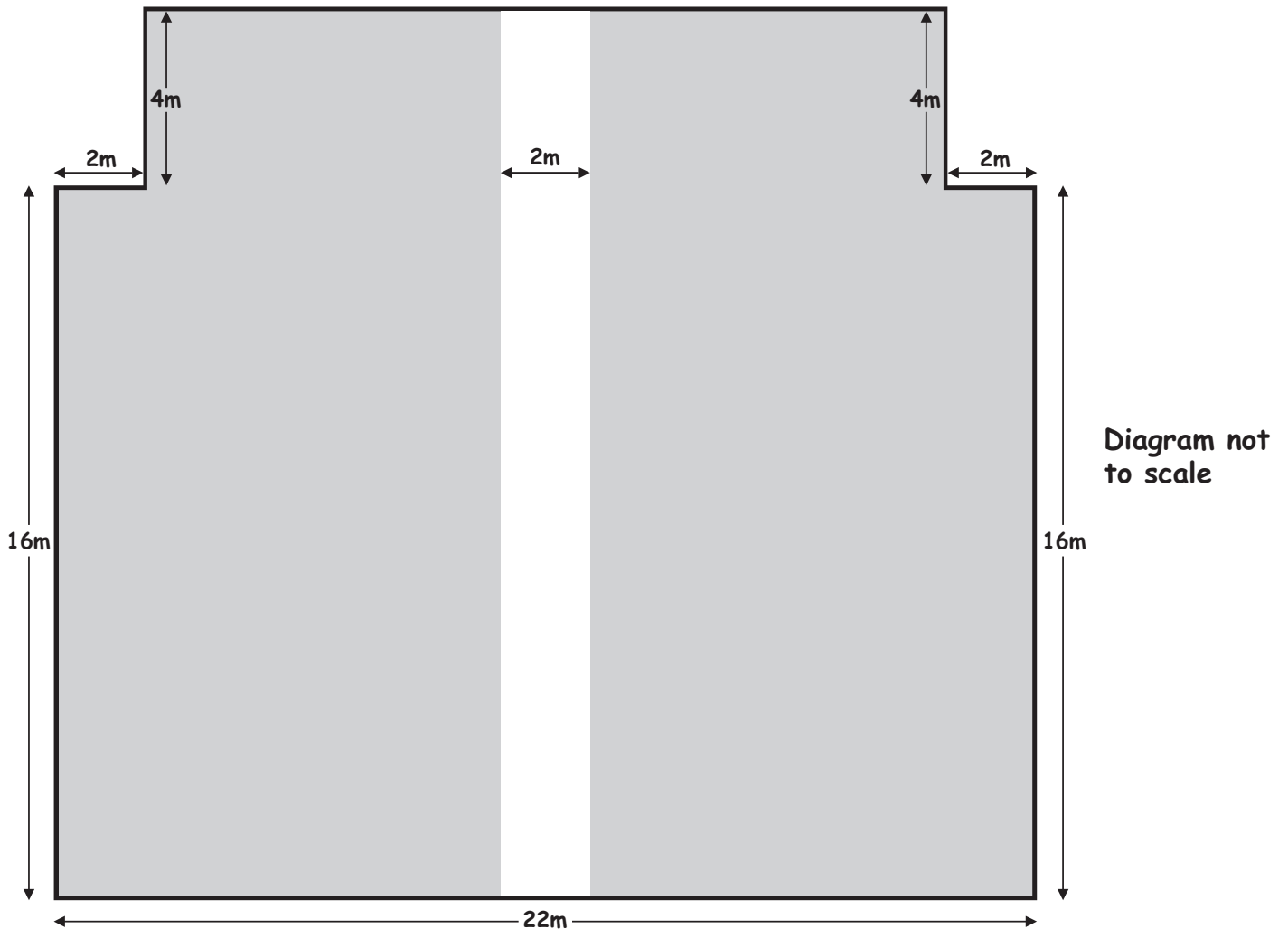
B 20cm

C 80cm

D 200cm

35 The plan shows the seating area of the new theatre.

Plan of theatre seating area



The shaded areas will have seats.

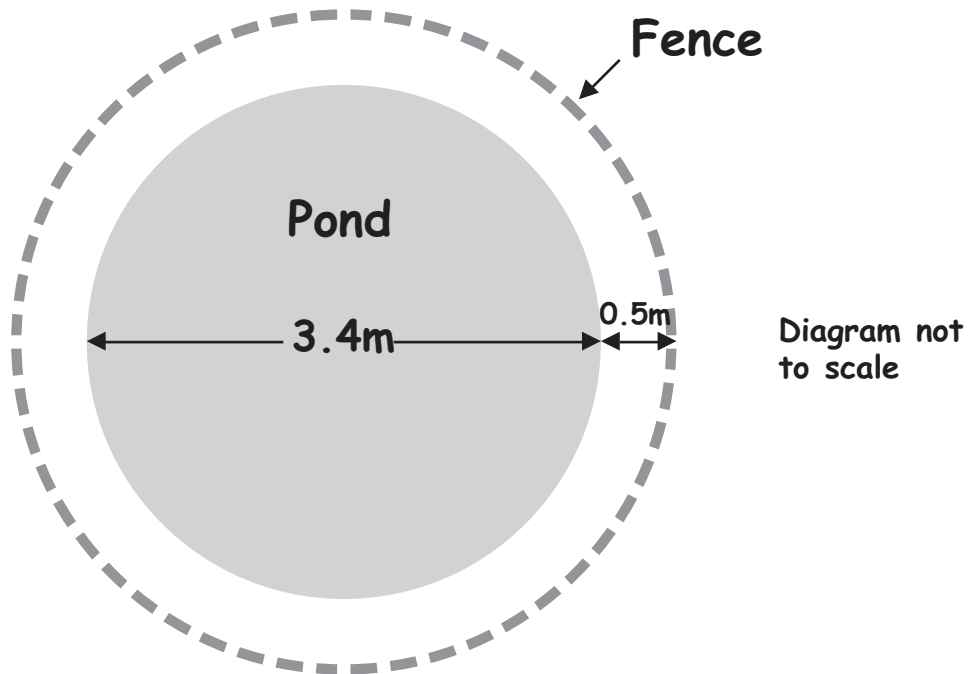
Each seat will take up a square 1 metre by 1 metre.

How many seats will fit in the seating area?

- A 336
- B 384
- C 392
- D 424

36 Outside the theatre the architect plans to have a circular pond, 3.4 metres in diameter.

The pond will have a fence around it, 0.5 metres from the edge.



$$\text{Circumference} = 2 \times \pi \times r$$

$$\text{Use } \pi = 3$$

What length will the fence be?

- A 3.0m
- B 8.9m
- C 10.2m
- D 13.2m

Questions 37 to 39 are about a golfer.

The frequency table shows a golfer's scores this season.

Score	69	70	71	72	73	74	75	76	77	78	79
Frequency	2	2	4	2	3	3	2	2	2	1	2

37 The golfer's ranking in his club depends on his median score.

What is his median score?

- A 10
- B 71
- C 73
- D 74

38 There is a prize for having 50% of a season's scores less than 72

What percentage of the golfer's scores are less than 72?

- A 2%
- B 11%
- C 32%
- D 40%

39 In a game, the golfer walks $3\frac{1}{2}$ miles round the golf course.

1 mile = 1.6 kilometres

How far does he walk, in kilometres?

- A 1.9km
- B 2.2km
- C 5.3km
- D 5.6km

40 A factory makes plastic dice, with sides two centimetres long.

The factory has an order to make 40 000 dice.

What volume of plastic does the factory use?

- A 80 000cm³
- B 160 000cm³
- C 240 000cm³
- D 320 000cm³

End of test