

Lifeskills Mathematics Added Value REVISION questions.

Name

Managing Finance

Q1

A bed shop is having a sale.

M

**ALL BEDS
ONE THIRD OFF NORMAL PRICE**



The normal price of a bed is £768.

Find the sale price of this bed.

Q2

Donna is a member of a fitness club.
Her membership fee is £450 per year.

Next year the membership fee will increase by 6.5%.

What will Donna's membership fee be next year?



Q3

Renvi is tiling her bathroom floor.

She needs 15 boxes of tiles.

The price of one box is £23.

The tile shop has a special offer of **“buy one box get one box half price”**.

Renvi makes use of the special offer.

How much does Renvi pay for 15 boxes of tiles?



Q4

3. Stephen is buying new kitchen cabinets.

Kitchen Cabinet Price List	Width		
	30 cm	50 cm	80 cm
Cabinets			
Base	£43	£66	£94
Wall	£39	£58	£92
High	£68	£116	£170
Drawer	£103	£123	£179

He buys:

- three Base cabinets of width 50 centimetres
- two Wall cabinets of width 30 centimetres
- one Drawer cabinet of width 80 centimetres.

Calculate the total cost of his kitchen cabinets.

Q5

In May, the rent for a flat is £795 per month.

In September, the rent is to be increased by £75 per month.

Ciara and her three friends share equally the cost of renting this flat.

How much rent will Ciara pay in September?



Q6

The fare charged by a taxi firm is:

£3 for the first 500 metres of a journey
plus 50p for **each additional** 500 metres.

- (a) Find the fare charged for a journey of 1500 metres.
- (b) The fare charged for another journey is £7.
What distance is the journey?

Q7

Margaret insures her house which is worth
£105 000.

The annual premium is £3·20 for every £1000
worth of cover.

She is given a discount of $\frac{1}{8}$ of her annual
premium.

How much does Margaret pay to insure her
house?



Q8 ?

Q9

In Brown's Supermarket, a 1.5 litre carton of orange juice costs £1.97.

In Scott's Supermarket, a 1 litre carton of orange juice normally costs £2.12.

Scott's Supermarket has a special offer of **buy two get one free**.

Which supermarket offers the better deal for 6 litres of orange juice?

Give a reason for your answer.



Q10

Faisal and Jake are going to Belgium on holiday.

They book flights for £74 return per person.

In Belgium, they hire a caravan for 3 weeks.

The caravan costs 287.5 euros per week.

Find the total cost of their holiday **in pounds**.

(£1 = 1.15 Euros)



Q11

Last year Mark rented a villa in Spain in April and October.

In April the villa cost him £800.

In October it cost the same number of **euros** as it did in April.

How much, in pounds and pence, did Mark pay in October?

Exchange Rates

April £1 = €1.33
October £1 = €1.07

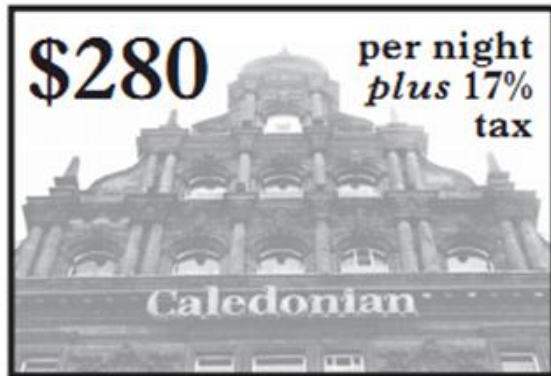
Q12

A room in the Caledonian Hotel in New York costs 280 dollars per night plus 17% tax.

The exchange rate is 1.51 dollars to the pound.

Find the cost of the room per night.

Give your answer in pounds and pence.



Q13

- (a) Before he went on holiday to Australia, Jack changed £2000 into Australian dollars.

The exchange rate was £1 = AUS1.58.

How many Australian dollars did Jack receive for £2000?

- (b) While in Australia he changed a further £400 into Australian dollars.

He received AUS620.

What was the new exchange rate?

Q14

Jim works at Dario's Pizzas.

His basic rate of pay is £5.42 per hour.

Overtime is paid at time and a half.

Last week his gross pay was £216.80.

He worked 28 hours at the basic rate.



How many hours of overtime did Jim work last week?

Q15

Carol is a shop assistant.

Her employer is introducing new pay rates.

Carol's current and new pay rates are shown below.

Current Pay Rate		New Pay Rate	
Mon–Fri	£8 per hour	Mon–Sat	£8.75 per hour
Sat	time and a half		

Carol works 7 hours each day from **Tuesday to Saturday**.

Will she be better or worse off when the new pay rates are introduced **and** by how much?

Q16

Sandie works in a factory. Her payslip for the week ending 17th March is shown below. There are **three** missing entries.

NAME:	Sandie Thompson Week ending: 17/3/12		
Basic Pay £229.84	Overtime £45.63	Bonus £35.00	Gross Pay
Income Tax £34.70	National Insurance £22.48	Pension	Total Deductions £76.43
			Net Pay

Calculate Sandie's:

- (a) gross pay;
- (b) net pay;
- (c) pension.

Q17

Linda sells make-up. Her basic pay is £50 per week.

She is also paid 30% commission on all sales **over** £200.

How much is she paid altogether in a week when she sells £620 worth of make-up?

Q18

Anna's basic rate of pay is £8.60 per hour for a 35 hour week.

Her overtime rate of pay is time and a half.

Complete her payslip for a week in which she works 3 hours overtime.

Payments				Deductions	
	Hours	Rate	Amount		Amount
Basic	35	£8.60	£301.00	Tax	£39.40
Overtime	3			National Insurance	£23.88
		Gross Pay		Total Deductions	£63.28
				Net Pay	

Q19

Joe borrows £1400 from a bank.

The rate of interest is 7.5% per annum.

Calculate the interest he must pay after four months.

Q20

The table below shows the **monthly payments** to be made when money is borrowed from a credit union.

Amount borrowed	6 months	12 months	18 months	24 months	30 months
£500	£86.30	£44.43	£30.50	£23.54	£19.40
£1000	£172.60	£88.85	£60.99	£47.08	£38.80
£2000	£345.20	£177.70	£121.98	£94.15	£77.60
£5000	£863.00	£444.25	£304.98	£235.40	£194.00

Fred borrows £1000 over 2 years.

Calculate his **total** payments.

Q21

The table below shows the **monthly payments** to be made when money is borrowed from a finance company.

Borrowers can choose to make payments with or without payment protection.

Loan Amount	Term (Months)	Monthly Payment	
		Without Payment Protection	With Payment Protection
£3000	36	99.58	102.08
£3000	48	80.00	81.88
£3000	180	68.75	70.25
£10 000	36	327.78	336.11
£10 000	48	262.67	268.92
£10 000	180	219.17	224.79
£50 000	60	1083.33	1108.33
£50 000	120	672.92	685.42
£50 000	180	538.19	546.53

- (a) Brad borrows £10 000 over 4 years **with payment protection**.
State his monthly payment.
- (b) Over the 4 years, how much would Brad save **in total** if he repaid the loan without payment protection?

Q22

The table below shows the **monthly payments** to be made on a loan of **£1000**.

Period of Loan	1 year	2 years	3 years	4 years
Monthly Payment on £1000	£87.10	£45.34	£31.45	£24.53

- (a) Gavin borrows **£5000** over 3 years.
Calculate his **total** payments.
- (b) Calculate how much this loan cost Gavin.

Q23

A market trader buys a box of twelve shirts for **£80**.
He sells them for **£9** each.

- (a) How much profit does he make altogether?

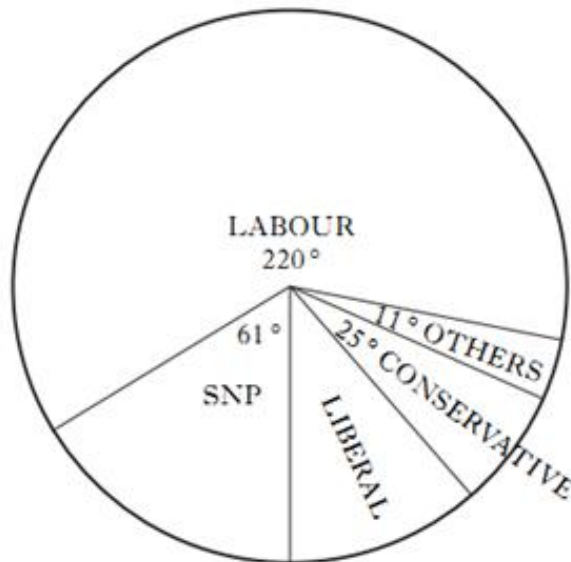
Q24

£4750 was invested in a savings account.
The rate of interest was **2.4%** per annum.
How much interest was due after eight months?

Statistics

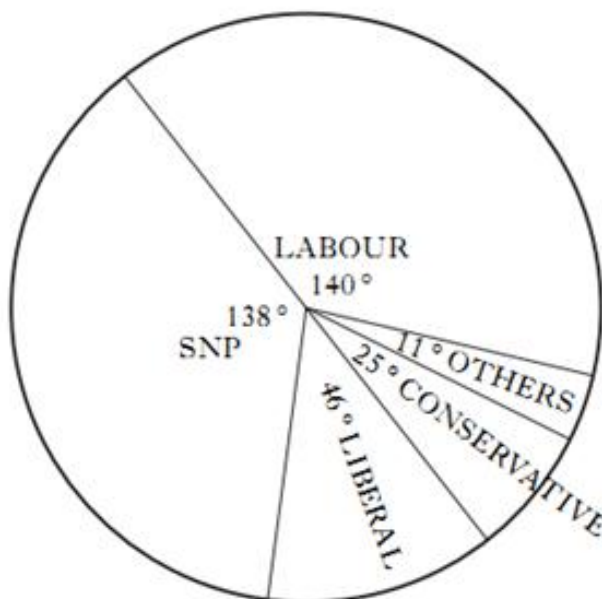
Q25

The pie chart shows the share of the votes received by candidates in the Gleniston constituency at the general election in 2005.



- (a) A total of 30 960 people voted in the Gleniston constituency. How many people voted for the Liberal candidate?

The pie chart below shows the share of the votes received by candidates in the Gleniston constituency at the by-election in 2008.



- (b) Describe the **differences** in the share of the votes received by candidates in the by-election in 2008 and the general election in 2005.

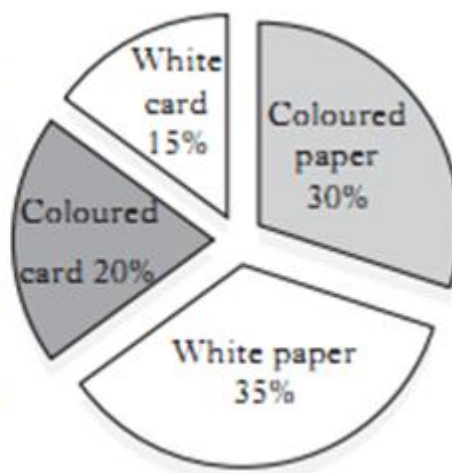
Q26

The school's ECO group is collecting card and paper for recycling.

The percentage of each type of card and paper collected is shown in the pie chart.

The weight of white card collected is 90 kilograms.

Calculate the total weight of card and paper collected.



Q27

David asked twenty of his classmates how many books they had downloaded.

His results are shown below.

8 6 11 15 12 12 9 32 16 17
24 33 41 26 37 35 16 17 5 32

Construct an ordered stem and leaf diagram to display the results.

The stem and leaf diagram below shows the heights of the girls in a Primary 7 class.

HEIGHTS

Girls

11	1	6		
12	2	5	9	
13	0	1	6	8 8
14	3	4	7	

12 | 5 represents 125 centimetres

- (a) What height is the tallest girl?
 (b) Find the median height.

The stem and leaf diagram below shows the heights of both the boys and the girls in this class.

HEIGHTS

Boys

Girls

9	8	5	1	11	1	6		
8	7	4	3	12	2	5	9	
		6	2	13	0	1	6	8 8
			7	14	3	4	7	

12 | 5 represents 125 centimetres

- (c) Compare the heights of the boys with the girls in this class.
 Comment on the overall difference.

Q29

John and Steven are playing snooker. They play eight games.
Shown below are the number of points John scored in each game.

21 39 22 53 45 19 43 46

- (a) Find the median.
- (b) Find the range.
- (c) The median number of points Steven scored is 23 and the range is 15.

Make **two** comments comparing the number of points scored by Steven and John.

Q30

Each card in a pile has a number printed on it.

- (a) Seonaid selects these six cards from the pile.

The number on the last card is hidden.

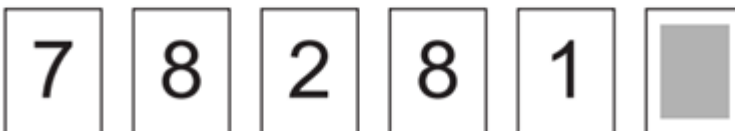


The range of the numbers on the **six** cards is 8.

Find the hidden number.

- (b) Kirsty selects these six cards from the pile.

The number on the last card is hidden.



The mean of the numbers on the **six** cards is 5.

Find the hidden number.

Q31

The stem and leaf diagram shows the number of minutes on average spent on homework per night by a group of first year pupils.

1	0 5 5 5
2	0 1 2 2 3 5 5 8 9
3	0 5 5 6 6 7 8 9 9 9
4	2 4 4 5 6 7
5	0

$n = 30$ 1 | 0 represents 10 minutes

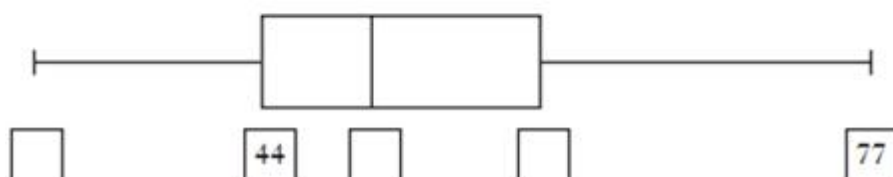
- (a) Using the above data find:
- (i) the median; 1
 - (ii) the lower quartile; 1
 - (iii) the upper quartile. 1
- (b) Draw a boxplot to illustrate this data. 2

Q32

- The number of miles that a sample of 13 new cars can travel on one gallon of petrol is listed below.

44 41 44 55 47 77 48 53 50 32 70 62 56

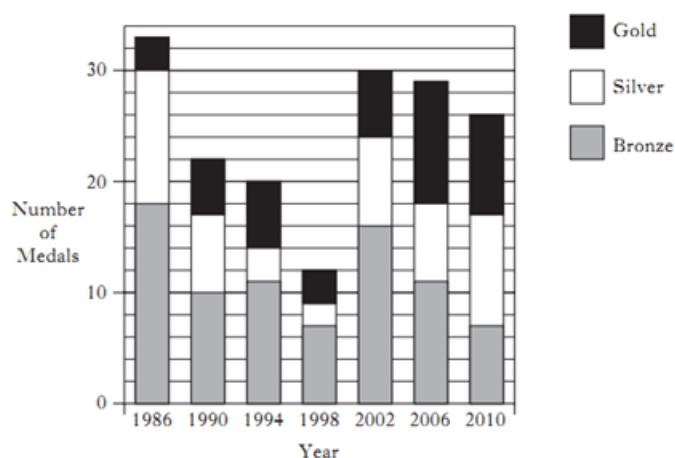
Complete the boxplot, drawn below, to show this information.



Q33 ?

Q34

The bar graph shows the number of medals won by Scotland at the Commonwealth Games since 1986.

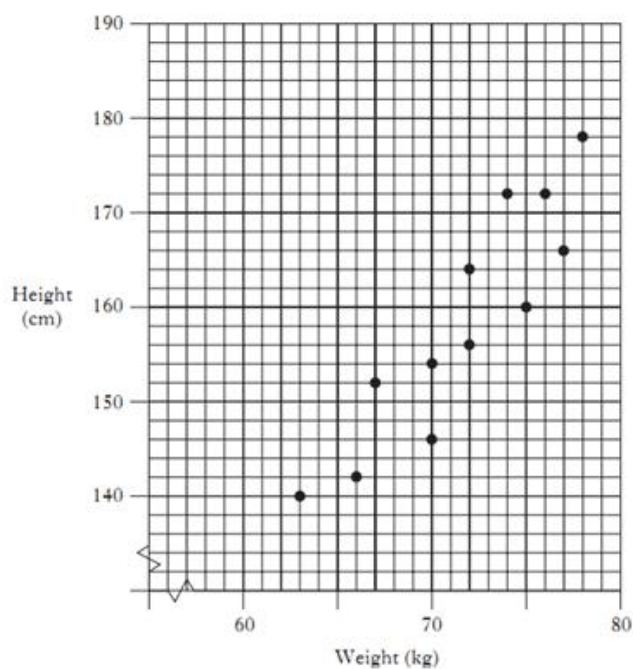


- (a) In which year were most **gold** medals won by Scotland?
- (b) How many **silver** medals did Scotland win in 1990?

Q35

The scattergraph shows the weights and heights of a group of teenagers.

- (a) Draw a line of best fit through the points on the graph.
- (b) Use your line of best fit to estimate the height of a teenager whose weight is 80 kilograms.



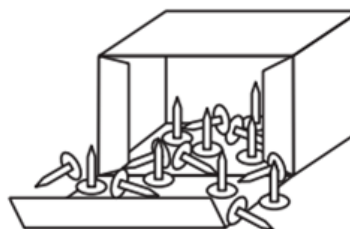
Q36

A sample of six boxes contains the following numbers of pins per box.

43 39 41 40 39 44

(a) For the above data, calculate:

- (i) the mean;
- (ii) the standard deviation.



The company which produces the pins claims that “the mean number of pins per box is 40 ± 2 and the standard deviation is less than 3”.

(b) Does the data in part (a) support the claim made by the company?

Give reasons for your answer.

Q37

Harry often plays golf and the scores for some of his games are recorded below.

84 78 87 80 81

(a) For this sample calculate:

- (i) the mean;
- (ii) the standard deviation.

Show clearly all your working.



(b) His partner for these games is Tony, whose scores are listed below.

104 98 107 100 101

Write down the mean and standard deviation of Tony's scores.

Q38

A ten-pin bowling team recorded the following six scores in a match.

134 102 127 98 104 131

(a) For this sample calculate:

- (i) the mean;
- (ii) the standard deviation.

Show clearly all your working.

In their second match their six scores have a mean of 116 and a standard deviation of 12.2.

(b) Consider the 5 statements written below.

- 1 The total of the scores is the same in both matches.
- 2 The total of the scores is greater in the first match.
- 3 The total of the scores is greater in the second match.
- 4 In the first match the scores are more spread out.
- 5 In the second match the scores are more spread out.

Which of these statements is/are true?

Q39

A college class consists of 8 male and 12 female students.

A student is chosen at random from the class.

What is the probability that the student is male?

Give your answer as a fraction in its simplest form.

Q40

A bag contains 8 blue marbles, 5 red marbles and 2 yellow marbles.

(a) A marble is taken from the bag.

What is the probability that the marble is yellow?

(b) This marble is put back in the bag.

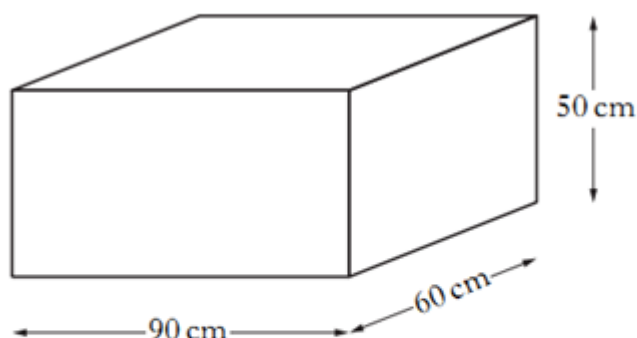
One red marble and one blue marble are then removed.

What is the probability that the next marble taken from the bag is blue?

Shape

Q41

This empty tank is to be filled with water.



The tank is a cuboid, 90 centimetres long, 60 centimetres wide and 50 centimetres high.

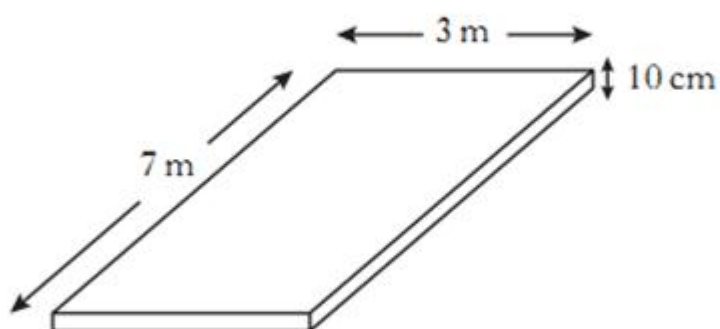
The water fills at a rate of 15 litres every minute. (1 litre = 1000 cm³)

How long will it take to fill the tank?

Q42

Bob is building a patio with a concrete base.

The base of the patio is 7 metres long, 3 metres wide and 10 centimetres deep.



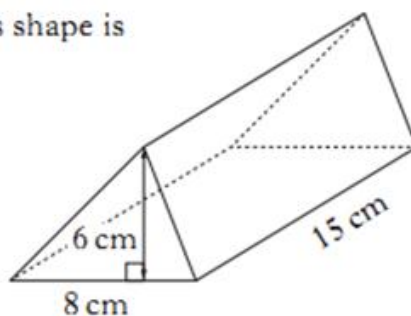
Concrete costs £60 per cubic metre.

Find the total cost of the concrete for the base of Bob's patio.

Q43

(a) The formula for the volume of this shape is

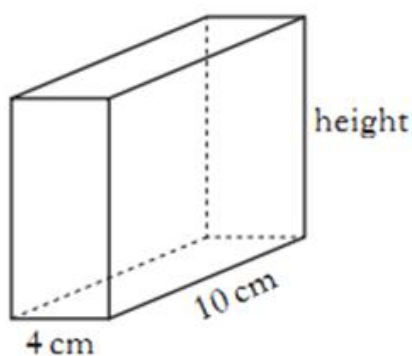
Volume = area of end \times length



The end of this shape is a triangle.

Use the formula to work out the volume of this shape.

(b) This cuboid has the same volume as the shape shown above.
Find the height of the cuboid.

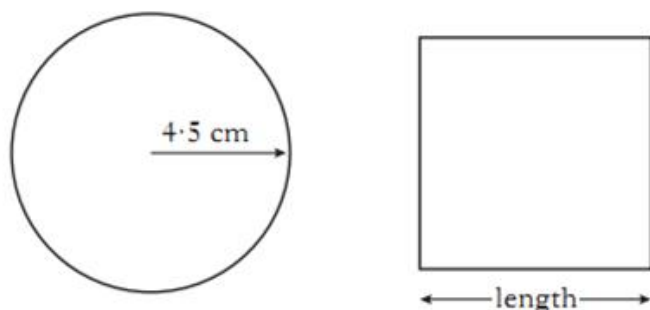


Q44

Pachuri Sauces are changing the shape of the labels on their jars from circles to squares.

The labels have the same area.

The circle has a radius of 4.5 centimetres.



Calculate the length of the new square label.

Q45

In a drum kit, the diameter of the large drum is twice the diameter of the small drum.

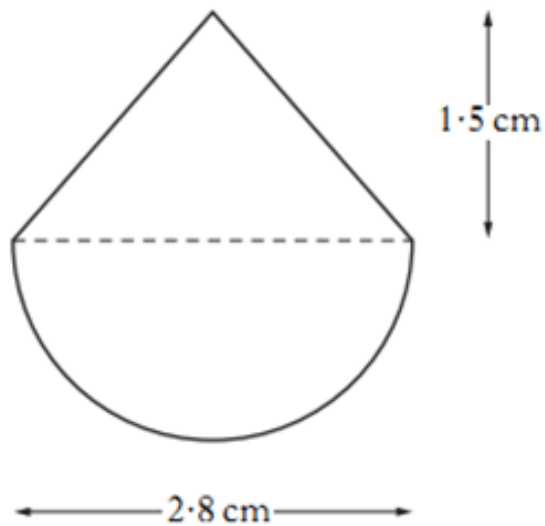
The small drum has a radius of 30 cm.

Calculate the circumference of the large drum.



Q46

A badge showing a clown's head consists of a semi-circle and a triangle.

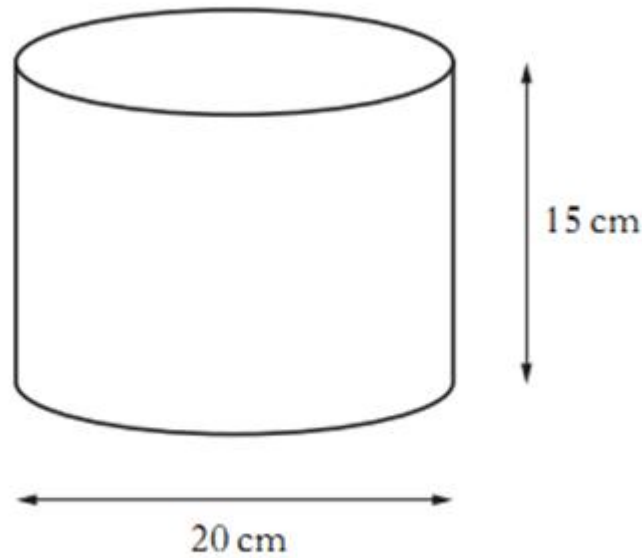


Calculate the area of the badge in square centimetres.

Give your answer correct to one decimal place.

Q47

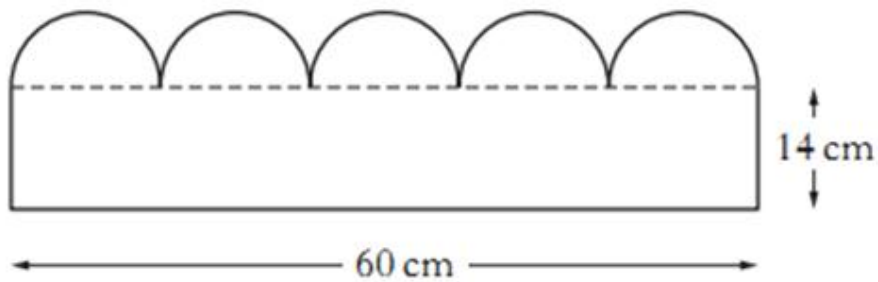
A cylinder has diameter 20 centimetres and height 15 centimetres.



Calculate the **curved** surface area of the cylinder.

Q48

A section of lawn edging consists of a rectangle with five equal semi-circles at the top.

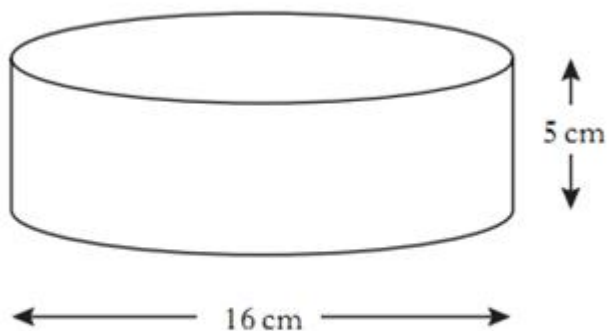


Calculate the area of the section in square centimetres.

Give your answer correct to the **nearest square centimetre**.

Q49

A cylinder has diameter 16 centimetres and height 5 centimetres.



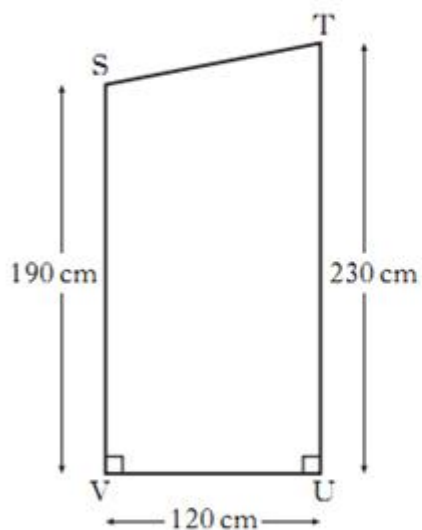
Calculate the **curved** surface area of the cylinder.

Use $\pi = 3.14$.

Q50

Maggie has bought a garden shed.

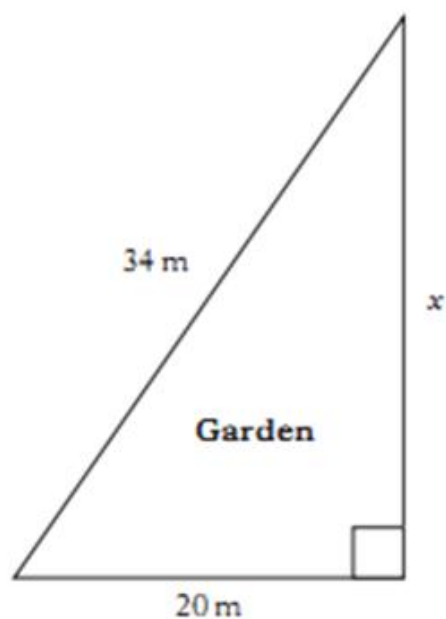
The dimensions for one side of the shed are shown in the diagram below.



Calculate the length of ST.

Do not use a scale drawing.

Q51



Alison's garden is in the shape of a right angled triangle.

She measured two sides of the garden.

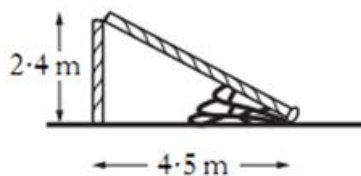
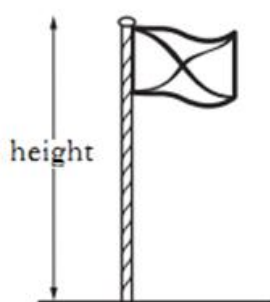
Calculate the length, x , of the third side of her garden.

Round your answer to one decimal place.

Do not use a scale drawing.

Q52

A flagpole snaps and falls over into the position shown.

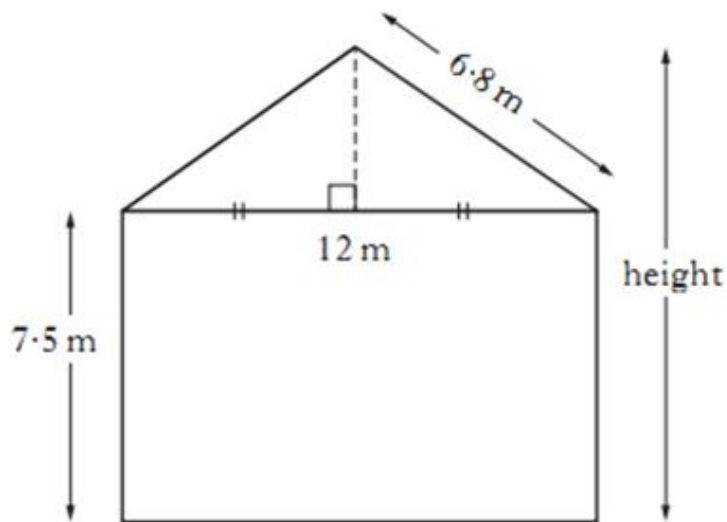


Calculate the height of the flagpole before it fell over.

Do not use a scale drawing.

Q53

The diagram shows the end view of a building.



Calculate the total height of the building.

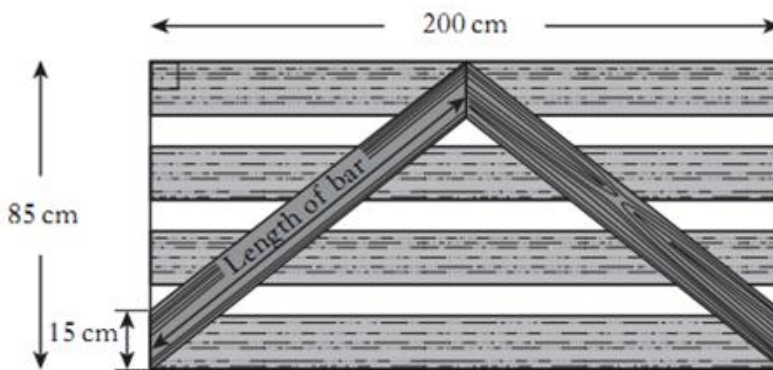
Do not use a scale drawing.

Q54

A wooden gate is 85 centimetres high and 200 centimetres wide.

The gate is strengthened by two bars which meet half-way across the gate as shown.

The ends of each bar measure 15 centimetres.



Calculate the length of **one** of the bars.

Do not use a scale drawing.

Measure

Q55

Sohail burns off 160 calories when he runs for 20 minutes.

For how many minutes would he need to run to burn off 400 calories?

Q56

Jamie took the overnight sleeper train from Edinburgh to London.

She arrived in London at 0624.

Her journey had taken 6 hours 58 minutes.



When did Jamie's sleeper train leave Edinburgh?

Q57

In the Annual Fun Run, Lucy ran 12 kilometres in 1 hour 15 minutes.

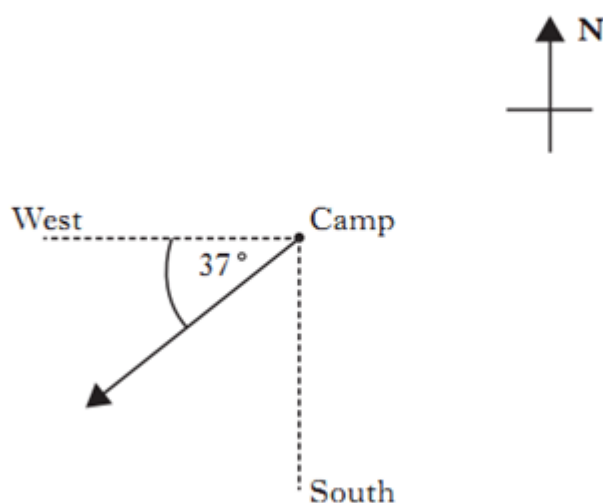
Calculate her average speed in kilometres per hour.



Q58

Brian sets out from camp during an expedition.

The arrow in the sketch below shows the direction in which he is travelling.



What is the three-figure bearing of this direction?

Q59

At the World Athletic Championships the mean time for the first semi-final of the 100 metres was 9.98 seconds.



For the second semi-final the times, in seconds, were:

10.21 10.04 9.92 9.98 10.04 9.94 9.9 9.73.

Was the mean time for the second semi-final better than the mean time for the first semi-final?

Give a reason for your answer.

Q60

A new tram system is operating in Inverness.

The trams run between the four stations shown.

All trams have the same journey times.



Part of the timetable is shown below.

Station	Tram 1	Tram 2
Crown	0956	1002
Union	1011	
Telford	1018	
Ferry		1044

Complete this timetable.

Q61

An overnight ferry left Lerwick at 1745 and arrived in Aberdeen at 0720 the next morning.

How long did the journey from Lerwick to Aberdeen take?

Q62

The Elaxtra car runs on electricity.

It runs for eight hours before needing to be charged.

Will the car be able to travel 315 kilometres at an average speed of 42 kilometres per hour before needing to be recharged?



Give a reason for your answer.

Q63

The map shows an aeroplane's flight path from Aberdeen to Belfast.

Use the map to find the distance **and** bearing of Belfast from Aberdeen.



Scale: 1 cm to 50 km

Q64

It will take Hassan 3 hours 40 minutes to drive from Dundee to Stranraer.

He must be in Stranraer by 2.15 pm.

What is the latest time he should leave Dundee?

Q65

Whistler downhill ski course is 3.1 kilometres long.
Finlay completed the course in 2 minutes 5 seconds.
Find his average speed in **metres per second**.

Q66

Two trains run from Glasgow to London.
They both have the same journey time.

	1st Train	2nd Train
Glasgow depart	1650	2215
London arrive	2125	

What time does the 2nd train arrive in London?

Q67

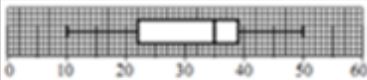
Chris took part in a track cycling competition.
He completed 6 laps of a 500 metre track.
This took him 4 minutes.
Find his average speed in **metres per second**.

Q68

Finance Revision Q Answers

1	(£) 512	10	(£) 898	17	£176
2	(£) 479.25	11	£994.39 or £994.40	18	£276.42
3	(£)264.50	12	£216.95	19	£35
4	(£)455	13	AUS3160	20	£1129.92
5	(£) 217.50	14	8 (hrs)	21 a	£268.92
6 a	£4	15	£1.75 worse off	b	£300
b	4500m	16 a	£310.47	22 a	£5661
7	£294	b	£234.04	b	£661
9	Brown's 60p cheaper	c	£19.25	23	£28
				24	£76

Statistics Answers

25 a	3698	30 a	9 or -2																																									
b	More SNP and Liberal and fewer Labour	b	4																																									
26	600(kg)	31 a	(i) 35, (ii) 22, (iii) 39																																									
27	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td>0</td><td>5</td><td>6</td><td>8</td><td>9</td></tr> <tr><td>1</td><td>1</td><td>2</td><td>2</td><td>5</td><td>6</td><td>6</td><td>7</td><td>7</td></tr> <tr><td>2</td><td>4</td><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>3</td><td>2</td><td>2</td><td>3</td><td>5</td><td>7</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	0	5	6	8	9	1	1	2	2	5	6	6	7	7	2	4	6							3	2	2	3	5	7				4	1								b	
0	5	6	8	9																																								
1	1	2	2	5	6	6	7	7																																				
2	4	6																																										
3	2	2	3	5	7																																							
4	1																																											
28 a	147 cm	32	32, 50, 59																																									
b	131 cm	34 a	2006																																									
c	e.g Girls are taller than boys	b	7																																									
29 a	41	35	fromj Line of Best fit																																									
b	34	36 a	mean = 41, s = 2.1																																									
c	On average Steven scored less than John. Steven's scores varied	b	Yes. $38 \leq 41 \leq 42$ and 2.1, 3																																									
30 a	9 or -2	37 a	mean =82, s = 3.54																																									
		b	mean =102, s = 3.54																																									
		38 a	116, 16.33																																									
		b	True: 1 and 4																																									
		39	2/5																																									
		40	2/15, 7/13																																									

Shape and Measure answers

41	18 mins	55	50 mins
42	£126	56	2326
43 a	360 cm^2	57	9.6(km/h)
b	9 cm	58	233°
44	7.97 cm	59	Yes, the mean time of the second semi was 0.01s less than the first
45	376.8 cm		
46	5.2 cm^2		
47	942 cm^3	60	1017, 1024, 1038
48	1123 cm^2	61	13hours 35mins
49	251.2 cm^2	62	Yes, 7.5 less than 8
50	126 (.5) cm	63	375km, 220°
51	27.5m	64	10:35am
52	7.5m	65	24.8m/s
53	10.7m	66	0250 or 2:50am
54	122 cm	67	12.5 m/s



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X744/75/01

**Lifeskills Mathematics
Paper 1
(Non-Calculator)**

FRIDAY, 9 MAY

1:00 PM - 1:50 PM



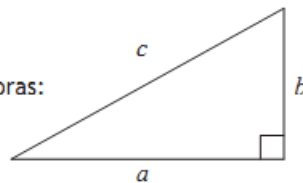
* X 7 4 4 7 5 0 1 *

FORMULAE LIST

Circumference of a circle: $C = \pi d$

Area of a circle: $A = \pi r^2$

Theorem of Pythagoras:



$$a^2 + b^2 = c^2$$

Volume of a cylinder: $V = \pi r^2 h$

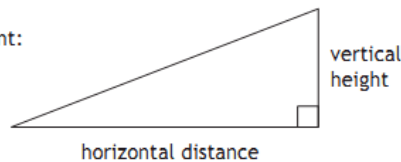
Volume of a prism: $V = Ah$

Volume of a cone: $V = \frac{1}{3} \pi r^2 h$

Volume of a sphere: $V = \frac{4}{3} \pi r^3$

Standard deviation: $s = \sqrt{\frac{\sum(x - \bar{x})^2}{n-1}} = \sqrt{\frac{\sum x^2 - (\sum x)^2/n}{n-1}}$, where n is the sample size.

Gradient:



$$\text{gradient} = \frac{\text{vertical height}}{\text{horizontal distance}}$$

1. Mrs Abid took a survey in her mathematics class of how pupils travelled to school.

The results are shown in the table.

	Walk	Cycle	Bus
Boys	6	4	3
Girls	2	3	12

What is the probability that a pupil chosen at random is a girl who cycles to school?

Give your answer in its simplest form.

2

2. Frances is not feeling well.

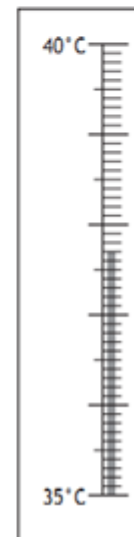
She takes her temperature using a thermometer.

Her temperature is shown below.

The temperature of a person in good health is $36.8^{\circ}\text{C} \pm 0.4^{\circ}\text{C}$.

Is Frances in good health?

Give a reason for your answer.



MARKS

3

5. Reece is given a lift to school.

She leaves the house at 8:30 am and arrives at school at 8:50 am.

She uses an app on her phone to calculate her average speed for the journey.

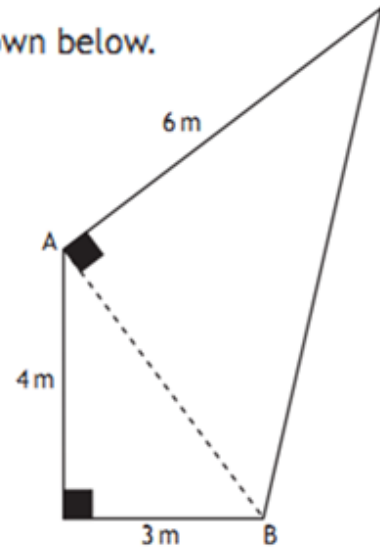
Her phone displays 6.8m/s .

What distance did she travel?

Give your answer to 2 significant figures.

4

3. A new sail is being designed for a yacht as shown below.
It consists of two right angled triangles.



- (a) Calculate the length of AB.
(b) Calculate the total area of the sail.

4. Adam works for 40 hours per week as a tractor driver on a farm.
His basic wage is £7·40 per hour.
Each week he pays £28·43 Income Tax and £8·57 in National Insurance.

- (a) Calculate his take home pay.
(b) Adam is going on holiday in 13 weeks.

The holiday costs £320 and Adam wants to take £200 spending money.
He makes a table to show his weekly income and outgoings.
He puts the balance into his holiday fund.

	Income	Outgoings
Take home pay		
Rent		£76
Bills		£41
Food		£45
Entertainment		£30
Transport		£23
Holiday Fund		

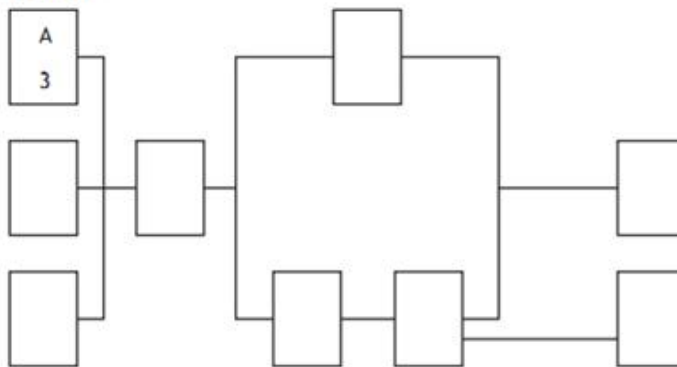
Will he have enough to cover the cost of the holiday and his spending money?

Justify your answer.

6. The Clarks employ Kitease to install a new kitchen for them. Kitease provide a team of workers to install the kitchen. The table shows the list of tasks and the time required for each.

Task	Detail	Preceding task	Time(hours)
A	Begin electrics	None	3
B	Build cupboards	None	5
C	Begin plumbing	None	2
D	Plaster walls	A,B,C	8
E	Fit wall cupboards	D	6
F	Fit floor cupboards	D	5
G	Fit worktops	F	3
H	Finish plumbing	G	3
I	Finish electrics	E,G	4

- (a) Complete the diagram below by writing these tasks and times in the boxes.

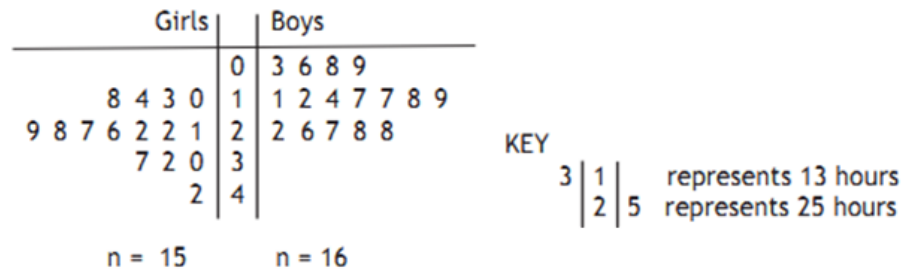


2

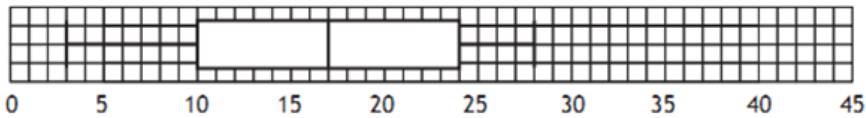
- (b) Kitease claim they can install this kitchen in 22 hours. Is this a valid claim? Give a reason for your answer.

2

7. This back-to-back stem and leaf diagram represents the number of hours a class spends on social networking websites in a week.



- (a) A boxplot is drawn to represent one set of data.



2

Which set of data does this represent?

Give a reason for your answer.

- (b) For the other set of data, state:

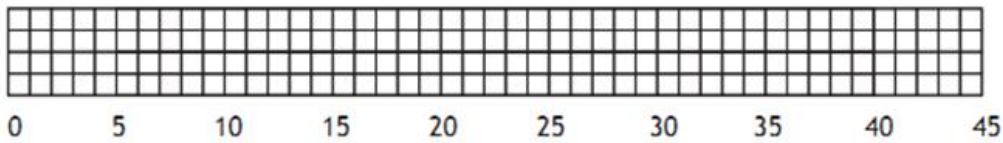
the median

the lower quartile

the upper quartile

- (c) Construct a box plot for the second set of data.

(An additional diagram, if required, can be found on *Page fifteen.*)



2

8. Elaine goes on a 5 day long business trip to Oslo in Norway.
She changes £750 to Norwegian kroner for the trip.

Rates of exchange	
Pounds Sterling (£)	Other Currencies
1	NOK 8.00 (Norwegian kroner)
1	€1.20 (euros)

(a) How many Norwegian kroner will Elaine receive? 1

(b) Elaine spends NOK 520 each day she is in Norway.

Her company extends her trip by sending her to Munich in Germany for a further 3 days.

If she changes all her remaining kroner to euros, how many euros will she receive?

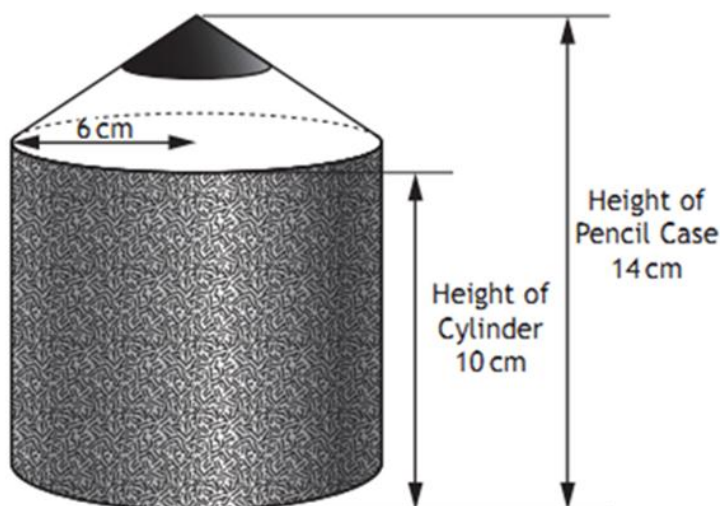
She spends €135 each day she is in Munich.

How much money does she have left at the end of her trip?

Give your answer in pounds sterling.

5

9. Robbie has a tub for his crayons.
It is in the shape of a pencil as shown below.
It consists of a cylinder with a cone on top.



Show that the volume of Robbie's tub is $408\pi \text{ cm}^3$.

4



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X744/75/02

**Lifeskills Mathematics
Paper 2**

FRIDAY, 9 MAY

2:10 PM - 3:50 PM



* X 7 4 4 7 5 0 2 *

1. Over an eight month period, Goran records how much he spends on his pay-as-you-go mobile phone.



£32, £23, £43, £40, £27, £35, £15, £25.

Calculate the mean and standard deviation for this data.

4

4. Saraish bought her house in May 2009 for £130 000.

In the first two years the value of the house increased by 5% per annum.

For the next three years the value of the house decreased by 2% per annum.

- (a) What is the value of the house in May 2014?

Give your answer to the nearest thousand pounds.

5

- (b) House prices have risen on average by 4.5% over this five year period.

Has the value of Saraish's house risen in line with this average?

Give a reason for your answer.

2

2. The Yellow Jersey Cycle Shop is a retail store that sells items for outdoor activities.

Alan has a 10% discount card for this store.

He receives a flyer showing the store's monthly deals.

He wants to buy all of the following items.

	<p>Mountain Bike Recommended Retail Price £310 Price with discount card £279</p>	<p>Waterproof Jacket Recommended Retail Price £50 Price with discount card £45</p>	
	<p>Helmet Recommended Retail Price £20 Price with discount card £18</p>	<p>Cycling Shorts Recommended Retail Price £10 Price with discount card £9</p>	

Monthly Deal 1

Extra 15% off discounted price when you spend over £75 in store.

Monthly Deal 2

Extra 65% off discounted price of bike accessories and clothing when you purchase a bike in store.

(a) Which Monthly Deal is better value for Alan?

Justify your answer.

3

(b) After he has bought the items Alan notices the following on his receipt.

The Yellow Jersey Cycle Shop

Price Guarantee

If any product can be found cheaper (including on special offer) then we will refund the difference plus 10% of the difference.

Alan finds exactly the same items at The Red Polka Dot Cycle Shop who are having a clearance sale.

They are giving 1/3 off the Recommended Retail Price of all the items that Alan has just bought.

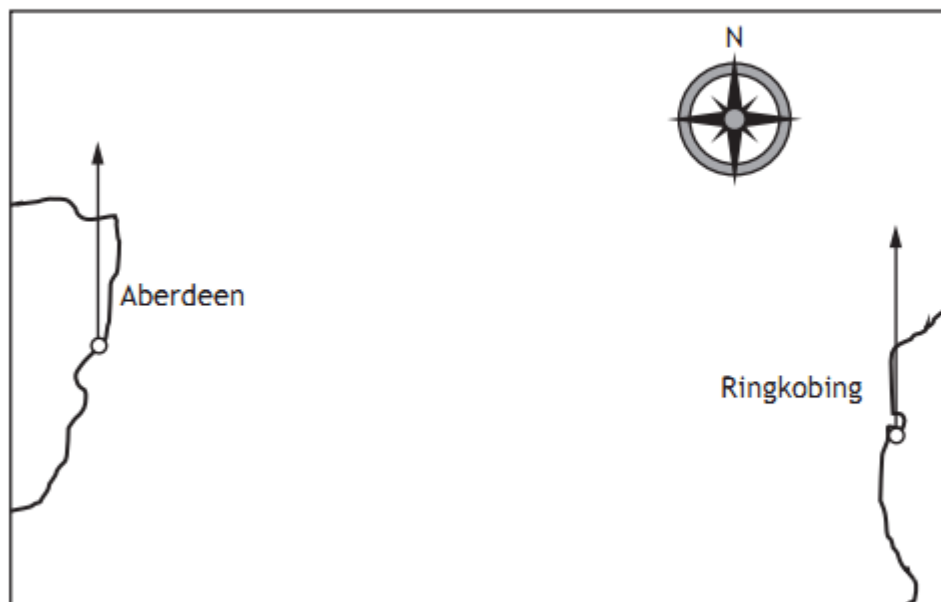
How much refund is he entitled to if he uses the Price Guarantee from The Yellow Jersey Cycle Shop?

3

3. A number of oil rigs operate in the North Sea.

The map below shows part of the North Sea with the ports of Aberdeen and Ringkobing marked.

(An additional map, if required, can be found on *Page fourteen*.)



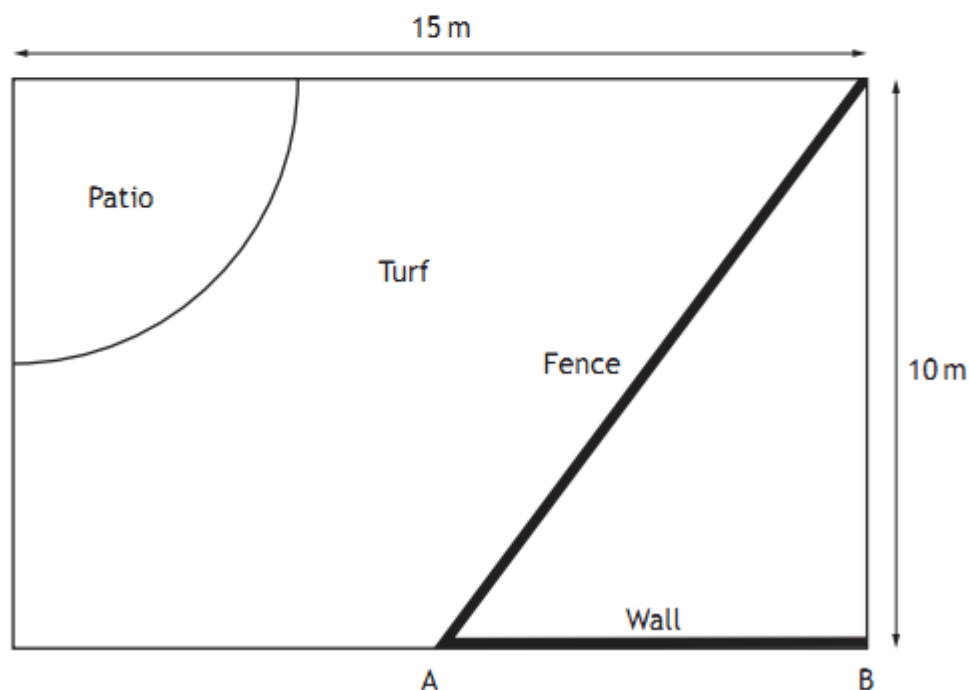
Scale 1 centimetre represents 50 kilometres

- (a) Harkins oil rig is 380 km from Aberdeen on a bearing of 065° .
Show the position of the Harkins oil rig on the map above. 2
- (b) A fishing vessel issues an SOS call which is received by both ports.
The bearing of the fishing vessel from each port is shown in the table below.

Bearing from	Three figure bearing
Aberdeen	125°
Ringkobing	250°

- (i) Mark the position of the fishing vessel on the map. 3
- (ii) Find the distance and bearing of the fishing vessel from the oil rig. 2

5. A landscape gardener is designing a garden.
 The rectangular garden has dimensions 15 metres by 10 metres.
 He plans to build a triangular flower bed.
 To separate the flower bed from the lawn, he uses a low fence.
 The fence is made of 5 sections, each 2.8 metres long.
 A patio in the shape of a quarter circle with a radius of 5 metres is to be created in the corner.
 The rest of the garden is to be laid as turf.
 A sketch of the garden is shown below.



- (a) Calculate the length of the wall, AB. 3
- (b) Turf is sold in 5 m^2 rolls costing £14.95 per roll.
 Calculate the cost of buying turf for this garden. 6

6. The table shows the qualifying times at the Malaysian 2013 Grand Prix.
The qualifying times are for 1 lap of the track.
The track is 5.543 kilometres long.
There are 56 laps in this Grand Prix.

	Driver	Team	Qualifying Time (min: sec)
1	Sebastian Vettel	Red Bull	01:49.7
2	Felipe Massa	Ferrari	01:50.6
3	Fernando Alonso	Ferrari	01:50.7
4	Lewis Hamilton	Mercedes	01:51.7
5	Mark Webber	Red Bull	01:52.2
6	Nico Rosberg	Mercedes	01:52.5

- (a) Vettel's time was 1 minute 49.7 seconds.
By how much time did Vettel beat Massa? 1
- (b) What was Lewis Hamilton's average speed in his qualifying lap?
Round your answer to the nearest km/h. 5
- (c) Nico Rosberg's average lap time for the Grand Prix was 1 minute 54.8 seconds.
How long did it take him to complete the Grand Prix?
Give your answer in hours, minutes and seconds. 4

7. Cameron wants to resurface his drive.

He has a choice of 3 surfaces.

SURFACE TYPE 3: CONCRETE SLABS

A concrete slab drive should last for 25 years.

Concrete slabs:
40 cm by 40 cm £2.12 each
Slabs can be cut to size

Slabs require 4 cm depth of hardcore to be laid underneath.
1 cubic metre = 2 tonnes hardcore.
Hardcore costs £18 per tonne bag.

2 bags of mortar at £35.99 per bag.

SURFACE TYPE 1: TARMAC

A tarmac drive should last for 30 years.

Tarmac costs £2 per square foot to lay.

(1 square metre = 10.76 square feet)

SURFACE TYPE 2: GRAVEL CHIPS

A gravel drive should last for 10 years.

Gravel needs to be laid to a depth of 5 cm.

Each 50 kg bag will cover 1 square metre to a depth of 5 cm.

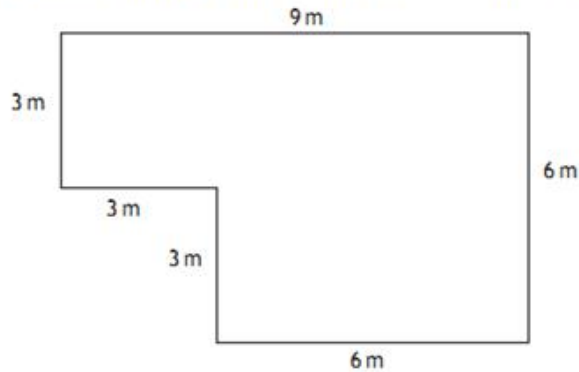
Each 50 kg bag costs £8.29

Each 850 kg bag costs £125.99

The gravel needs a weedproof membrane to be laid underneath.

Membrane to cover the drive costs £14.31.

Cameron makes a sketch of his drive to help him to calculate the cost of each type of surface.



(a) Calculate the minimum total cost for each surface type.

9

(b) Which is the most cost effective?

3