

CALCULATOR ALLOWED

- 1 100 grams of wholemeal bread contain the following:

Protein	10 grams
Carbohydrates	55 grams
Fibre	9 grams
Fat	3 grams
Other	23 grams

A pie chart is to be drawn to show this information.

What size of angle should be used for the carbohydrates ?

DO NOT DRAW A PIE CHART.

2. A company manufactures boxes of tacks and claims that there are “on average” 60 tacks per box.

This claim is tested by counting the number of tacks in a sample of 100 boxes.

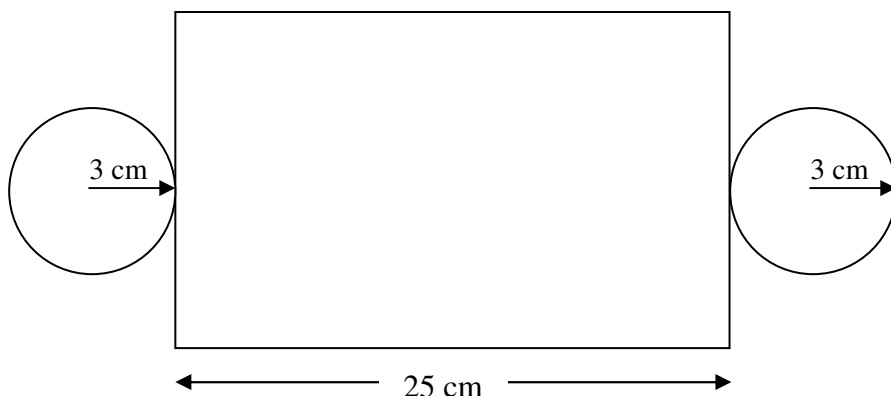
The result is shown below.

Number of tacks	Frequency	Number of tacks × Frequency
57	7	
58	13	
59	21	
60	24	
61	19	
62	12	
63	4	
Totals	100	

- a) Find the mean number of tacks per box.
- b) Is the company’s claim reasonable ?
You must give a reason for your answer.

KU	RE
2	
3	
	1

3. The sketch below shows the net of a three-dimensional shape.
The net consists of a rectangle and two equal circles of radius 3 centimetres.



Find the **volume** of the three-dimensional shape formed from this net.

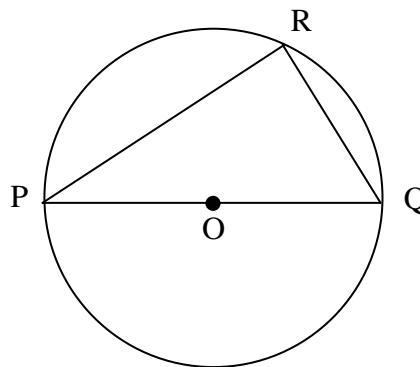
4. a) Solve algebraically

$$5x - 2 = 2x + 19$$

- b) Factorise fully

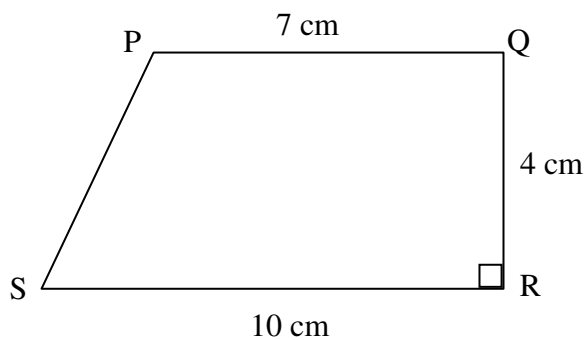
$$12 + 8p$$

5. PQ is the diameter of the circle with centre O.
R is a point on the circumference of the circle.
PR is 12 centimetres.
RQ is 5.5 centimetres.
Calculate the length of the radius of the circle.



6. PQRS is a trapezium

- $PQ = 7$ centimetres
- $QR = 4$ centimetres
- $SR = 10$ centimetres
- Angles PQR and QRS are both right angles.



Calculate the size of angle PSR.

DO NOT USE A SCALE DRAWING

KU	RE
	3
3	
2	
	4
	4

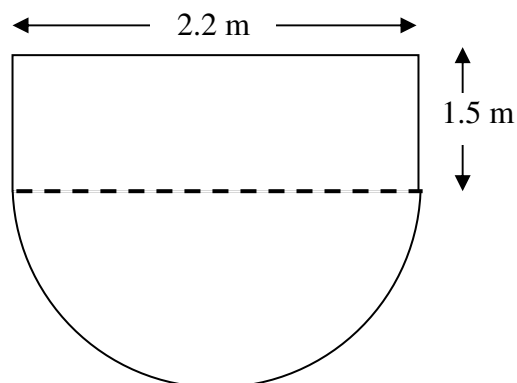
7. a) John is going to Italy on holiday.
 He changes £500 to Euros.
 The exchange rate is £1 = 1.51 Euros.
 How many Euros will he get ?

2

b) While in Italy he decides to visit Switzerland for a day.
 He wants to change 100 Euros to Swiss Francs.
 John knows the exchange rate is £1 = 2.33 Swiss Francs.
 How many Swiss Francs should he get for 100 Euros ?

3

8. The floor of a conservatory consists of a rectangle and a semicircle.
 The floor has the shape shown below.
 The measurements are in metres.



Find the total area of the floor.

4

9. A basic cable television package, which includes 30 channels, costs £8.75 per month.
 The cost of installation is £75 which will be included in the first month's bill.
 Additional channels can be added to the basic service.

- The movie channels package costs £12.50 per month.
- The music channels package costs £7.50 per month.
- The sports channels package costs £14.50 per month.

The Mackie family's first bill after having cable television installed was £98.25.
 They chose the basic cable television package plus one additional channels package.
 Which additional package did they choose ?
 Give a reason for your answer.

3

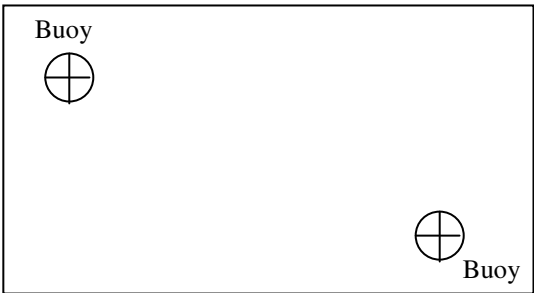
KU	RE
2	
	3
4	
	3

10. Janice is planning to go on holiday to Florida.
She wants to book with Florida Sun Holidays and stay at the Parkway Hotel.
The table below shows the pricing information for the Parkway Hotel.

Florida Sun Holidays		
PARKWAY HOTEL	Prices are per person in £s	
No. of Nights	7	14
May 17	445	725
24	459	735
31	465	749
June 7	479	765
14	499	779
21	509	789
28	519	799
July 5	525	805
12	535	825
19	545	839
26	609	855
Aug 2	615	869
9	625	895
16	639	875
23	539	845
30	519	805

- a) Janice wants to stay in the Parkway Hotel for 14 nights.
What will be the price if her holiday starts on 5th July ?
- b) The Parkway Hotel charges an extra £4.95 per person per night for a single room.
How much extra will Janice pay for her 14 night holiday if she wants a single room ?
- c) If Janice books today she will get a 20% discount on her **total cost**.
Find the discounted price of her 14 night holiday in a single room from 5th July.

KU	RE
1	
1	
2	

	KU	RE
<p>11. Mara travels 1850 miles every month.</p> <p>Currently her car runs on unleaded petrol which costs 76.9p per litre and her car travels 8.5 miles per litre.</p> <p>a) What is her monthly petrol bill ?</p> <p>Mara is thinking of having her car converted to run on Liquid Petroleum Gas (LPG). LPG costs 38.9p per litre and using this fuel her car will travel 7.8 miles per litre.</p> <p>b) What will be her monthly saving if she converts her car to run on LPG ?</p> <p>c) The cost of converting Mara’s car to run on LPG is £800. How many months of savings will it take to recover the cost of the conversion ?</p>	<p>2</p> <p>2</p> <p>2</p>	<p>2</p>
<p>12. The current, C amps, of an electrical appliance is calculated using the formula</p> $C = \frac{P}{240}$ <p>where P watts is the power rating.</p> <ul style="list-style-type: none"> • a hair dryer has a power rating of 850 watts. • The fuse used should be the one just bigger than the calculated current. • The choice of fuses is 3 amp, 5 amp and 13 amp. <p>Which fuse should be used ?</p>		3
<p>13. The diagram shows the position of two buoys.</p> <p>Sofie has to sail her yacht between the two buoys so that it is always the same distance from each buoy.</p> <p>Show the yacht’s course on the diagram.</p>		2
<i>END OF QUESTION PAPER</i>		
	TOTALS	<p>24</p> <p>25</p>