

# Added Value

**Revision Sheets** 

### **Revision Sheet 1 (Non Calculator)**

- 1) When buying a new car a deposit of 20% of the total cost must be paid at the time of booking. How much of a deposit must be paid to purchase a car costing £7000?
- 2) Using a scale factor of  $\frac{1}{2}$  John has reduced shape A to give shape B.



Is he correct? Give a reason for your answer

- **3)** Amanda was given  $\frac{3}{4}$  of £720. How much is this?
- 4) To make a fruit punch Kevin mixes 4.28 litres of orange juice with 1.6 litres of grapefruit juice. 4.9 litres of this punch is used. How much punch is not used?

5) A class voted for their favourite band.

The results of the 36 votes are shown below in the pie chart.



How many pupils voted for Band C?

### **Revision Sheet 2 (Non Calculator)**

- When buying a 3 piece suite a deposit 40% of the total cost must be paid at the time of ordering. How much deposit must be paid to buy a suite costing £900?
- 2) Using a scale factor of  $\frac{3}{2}$  Jack has enlarged shape A to give shape B.



Is he correct? Give a reason for your answer

- **3)** 640 people were in a theatre.  $\frac{7}{8}$  of them enjoyed the show. How many is this?
- 4) To make a special compost, a gardener mixes 2.79 litres of loam with 2.16 litres sand. The gardener uses 3.8 litres of this compost. How much compost is not used?
- 5) 100g of wholemeal bread contains 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 Protein?

DO NOT DRAW THE PIE CHART

#### **Revision Sheet 3 (Non Calculator)**

- 1) James sat a French test which was worth 140 marks. He got 50% of the marks available. What was his mark out of 140?
- 2) John has written this in his maths test:

$$3(x-2)-2(x+5)=x+4$$

Is he correct? Explain your answer.

**3)** 630 people were asked if they had a dishwasher.  $\frac{2}{3}$  of them said that they did have one. How many is this?

that they did have one. How many is this?

- 4) To make a special blend of tea, Karen mixes 5.43 kg of Assam tea with 2.1 kg of Darjeeling tea. Karen uses 5.6 kg of this blend. How much of the blend is not used?
- **5)** eSunTours is a holiday company.

Last year's percentage income from skiing, winter sun, flights and summer tours is shown in the <u>p</u>ie chart.



The total income from eSunTours was £160000 last year. What was the income from Skiing?

#### **Revision Sheet 4 (Non Calculator)**

- **1)**30% of the cars in a car park were blue. If there were 200 cars in the car park, how many were blue?
- 2) The letter A is shown in the diagram.



Copy the diagram in to your jotter, then draw an enlargement of this letter A using a scale factor of 2.

- **3)** 720 vehicles were checked for the safety of their tyres.  $\frac{5}{6}$  of them passed the safety check. How many is this?
- 4) To make concrete, a builder mixes 7.12 kg of sand with 3.4 kg of stones. The builder uses 9.6 kg of the concrete. How much concrete is not used?
- 5) A survey of 1800 first time voters was carried out.

The pie chart below (ON THE NEXT PAGE) shows how they would vote at the next election.



How many of the 7200 first time voters would vote Conservative?

#### **Revision Sheet 5 (Non Calculator)**

- 1) 10% of the passengers on a flight to Dubai were native Arabic speakers. If there were 220 passengers on board, how many were native Arabic speakers?
- 2) Copy the shape below in your jotter and draw a reduction of the given shape using a scale factor of  $\frac{1}{2}$ .



National 4

- 3)  $\frac{7}{9}$  of the books in a library with 810 books were fiction. How many fiction books were there?
- **4)** To make squash, Karen 230 ml of cordial with 840 ml of water. Karen drinks 700 ml of this squash. How much squash is not used?
- 5) 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 all the card and paper is 90 kilograms.



Calculate the total weight of coloured paper collected.

## **Revision Sheet 1 (Calculator)**

- **1)** Solve algebraically the equation: 6x 3 = 3x + 3
- Charlie needs to paint the side of his house which is made up of a square and an isosceles triangle.

Its dimensions are shown below.



Calculate the area of the side of the house.

**3)** Samira is designing a chain belt. Each section of the belt is made from metal rings as shown below.



a) Complete the table below:

Number of sections (s)	1	2	3	4	5	11
Number of metal rings (r)	4	9				

**b)** Write down a formula for calculating the number of rings (r), when you know the number of sections (s).

- c) Samira uses 79 rings to make her belt. How many sections does her belt have?
- **4)** A family going on holiday have to travel to a port to catch the ferry.

They travel for **8 hours and 15 minutes** at an average speed of **80 kilometres per hour.** 

How far away, in kilometres, is the port?

5) A cross section of a roof is in the shape of an isosceles triangle. The base of the triangle is 14 metres and the height is 11 metres as shown.



Calculate the perimeter of this triangle.

6) Jim is flying a kite. The kite is 6 m above the ground and Jim is 43 m distant from the kite. Calculate the angle of elevation x°



7) A class of students sat two tests in the same subject. Here are their marks:

Student	Test A	Test B
Allan	30	30
Margaret	50	75
Kirandeep	25	20
Ahmed	62	80
Simon	48	60
Susan	40	50

- (a) Draw a scattergraph of these marks.
- (b) Draw a best fitting straight line for this scattergraph.
- (c) Karen scored 70 marks for Test A. Use your line to estimate the number of marks she scored in Test B
- 8) In an experiment, 25 coloured discs are collected.

The information is shown in the table.

White	3
Blue	4
Red	6
Green	3
Yellow	9

The discs are then put into a bag and one is drawn out.

What is the probability that the disc drawn out is red?

#### **Revision Sheet 2 (Calculator)**

- **1)** Solve algebraically the equation: 3-4x = 5x-15
- 2) Michael's garden is shown in the diagram below. Find the area of the garden.



**3)** A metal fence for a garden is made by joining iron bars as shown below.



**a)** Complete the table below:

Number of sections (s)	1	2	3	4	5	12
Number of iron bars (b)	8		22			

- **b)** Find a formula for calculating the number of iron bars (b), when you know the number of sections (s).
- c) A fence has been made by joining 176 iron bars. How many sections are in this fence?
- A train travelled 84 kilometres at an average speed of 35km/h.
   How long did the journey take? Give your answer in hours and minutes.
- 5) An earring in the shape of an isosceles triangle is made from silver wire. The dimensions of the earring are shown on the diagram below.



Calculate the length of silver wire needed to make a **pair** of earrings. **Do not use a scale drawing.** 

A cable car ride up a mountain has a length of 900 m. The base station is 500m distant from the mountain station. What is the angle of elevation of the ride?



For safety reasons the angle x° should not be greater than 60°. Is the ride safe?

7) A class of students sat two tests in the same subject.

Student	Test A	Test B
Fraser	65	65
Julie	48	68
Sarah	40	55
Kamal	20	30
Gavin	65	82
Navpreet	59	85

Here are the marks for six of the students who sat the tests:

- (a) Draw a scattergraph.
- (b) Draw a best fitting straight line.
- (c) John scored 80 for Test B. He estimated that he would also score 70 in test A. Do you agree with his estimate?
- 8) Bag 1 contains 4 yellow and 5 white marbles.

Bag 2 contains 8 yellow and 12 white marbles.

Susan thinks she has a greater probability of picking a yellow marble from Bag 1.

Is she correct? Justify your answer.

### **Revision Sheet 3 (Calculator)**

- **1)** Solve algebraically the equation: 7x = 3x + 20
- 2) Josh's living room is L shaped. He needs a new carpet and has to work out the area of the floor. Find the area of the floor.



**3)** Sandra is working on the design for a bracelet. She is using matches to make each shape.



- a) Draw shape 4
- **b)** Complete the following table:

Shape number (s)	1	2	3	4	5	13
Number of matches (m)	5	9			21	

- c) Find a formula for calculating the number of matches, (m), when you know the shape number, (s).
- d) Which shape number uses 61 matches?You must show your working.
- Bill travelled by plane to visit his cousin in Berlin. The journey of 1170 kilometres took 2 hours 36 minutes.

What was the average speed of this journey in kilometres per hour?

**5)** The route for a sponsored walk is in the shape of an isosceles triangle.

The base of the triangle is 15 kilometres and the height is 12 kilometres as shown.



Find the distance James has to walk to complete the sponsored walk.

6) A car travels 15 m up a ramp to reach the first floor of a car park. The vertical height covered is 3 metres. What is the angle of elevation of the ramp?



For safety reasons the angle x° should not be greater than 11°. Is the ride safe?

7) A class of students sat a test in Maths and one in French.

Here are the marks for six of the students who sat the tests:

Student	MATHS	FRENCH
Johnny	65	55
Julie	38	68
Sue	40	55
Kamal	50	40
Gummy	25	32
Navpreet	59	85

- (a) Draw a scattergraph.
- (b) Draw a best fitting straight line.
- (c) John scored 80 for Test B. He estimated that he would also score70 in test A. Do you agree with his estimate?
- 8) Last month a garage sold 12 red cars, 9 silver cars and 15 black cars.
  Joe bought one of these cars
  What was the probability that the car Joe bought was a silver car?
  Write your answer as a decimal.

## **Revision Sheet 4 (Calculator)**

- **1)** Solve algebraically the equation: 3(x+6) = 30
- **2)** Jim's lawn has a triangular flower bed in the middle. Find the area of the grass.



**3)** A children's play area is to be fenced. The fence is made in sections using lengths of wood, as shown below.



a) Complete the table below:-

Number of sections (s)	1	2	3	4	5	12
Number of lengths of wood (w)	6	11				

- **b)** Write down a formula for calculating the number of lengths of wood (w) when you know the number of sections (s).
- c) A fence has been made from 81 lengths of wood. How many sections are there in this fence? You must show your working.

4) Sarah took a sailing trip on the Rhine in Germany. The journey of 95 kilometres took 1 hour 54 minutes.

What was the average speed of this journey in kilometres per hour?

5) A road sign is in the shape of an isosceles triangle. The base of the triangle is 55 centimetres and the height is 35 centimetres as shown.



Calculate the perimeter of this triangle.

6) A block of flats is 23 m high. Stan stands 10 m away from the front. What is the angle of elevation of the top of the flats?



10 m Bob the builder said the angle of elevation was more than 60°. Was he correct? 7) The scattergraph shows the age and mileage of cars in a garage.



- (a) Copy the graph and draw a line of best fit
- (b) Joe the car salesman estimates the mileage of a 4 year old car to be 80000miles. Is he correct?
- 8) A box contains 10 coloured balls. There are 4 yellow balls, 3 blue balls, 2 green balls and 1 red ball.

David takes a ball from the box.

- (a) What is the probability that the ball is blue?
- (b) The ball is put back in the box. 2 yellow balls and the red ball are then removed. What is the probability that the next ball David takes from the box is green?

### **Revision Sheet 5 (Calculator)**

**1**) Solve algebraically the equation: 7 = 20 - x

2) Tracey is going to build a room in the attic space of her house.Find the area of attic space *not* used if the room is 4 mWide and 2 m high.



3) Mhairi makes necklaces in M-shapes using silver bars.



a) Complete the table below:-

Number of M-shapes (m)	1	2	3	4	5	15
Number of bars (b)	4	7				

- **b)** Write down a formula for calculating the number of bars (b) when you know the number of M-shapes (m).
- c) Mhairi has 76 silver bars. How many M-shapes can she make?

 Brian travelled by motorbike to visit his friend in Peebles. The journey of 76·5 kilometres took 1 hour 42 minutes.

What was the average speed of this journey in kilometres per hour?

5) The cross section of a bar of chocolate is an isosceles triangle. The base of the triangle is 6 cm and the height is also 6 cm as shown.



Calculate the perimeter of this triangle.

**6)** A door wedge is 8 cm long and 3 cm high. What is the angle it makes with the ground?



7) A teacher records the number of absences and end of term test mark for each of her students. The scattergraph shows the results.



(a) Copy the scattergraph and draw a line of best fit through the points on the graph.

(b) Use your line of best fit to estimate the mark of a student who had 8 absences.

8) Craig works in the school office.Shown below is his order for 25 boxes of folders.

Office Supplies						
Blue Folders Green Folders Pink Folders Yellow Folders	7 boxes 11 boxes 3 boxes 4 boxes					
Total	25 boxes					

His order has arrived in identical boxes but they are not labelled.

(*a*) What is the probability that the first box Craig opens contains pink folders?

(b) The first box Craig opens contains green folders. What is the probability that the next box he opens contains blue folders?

#### **Revision Sheet 6 (Calculator)**

- 1) Solve algebraically the equation: 12 3x = 5x 12
- 2) A plot of land has the shape shown below. Find the area of the plot.



Jenni is making a wallpaper border.
 She is using stars and dots to make the border.



**a)** Complete the table below:

Number of stars (s)	1	2	3	4	5	10
Number of dots (d)			11			

- **b)** Write down a formula for calculating the number of dots (d), when you know the number of stars (s).
- c) Jenni uses 62 dots for her pattern. How many stars are there?
- 4) Caitlyn travelled by bus to visit her friend in Perth. The journey of 102 kilometres took 1 hour 42 minutes.What was the average speed of this journey in kilometres per hour?

5) A road sign is in the shape of an isosceles triangle. The base of the triangle is 60 cm and the height is 70 cm as shown.



6) Laura is shooting clay pigeons. Her target is 100 metres away and 50 metres above the ground. What is the angle of elevation she must use to hit the target?



7) The table below shows the marks scored by pupils in French and Italian exams.

Pupils	Α	В	С	D	E	F	G	Н
French Mark	15	23	50	38	40	42	70	82
Italian Mark	28	31	62	54	45	55	85	95

- (a) Using these marks, draw a scattergraph.
- (b) Draw a best-fitting line on the graph.
- (c) A pupil who scored 65 in his French exam was absent from the Italian exam. Use your best-fitting line to estimate this pupil's Italian mark.

#### 8) There are 2 yellow, 3 red, 1 blue and 4 orange cubes in a bag.

(*a*) Jason takes a cube from the bag. What is the probability that it is orange?

(b) The cube is replaced in the bag and 3 white cubes are added to the bag. What is the probability that the next cube taken from the bag is **not** red?