


Year 5/6
Maths
Booklet 5

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

1) $7 \times 2 = \underline{\quad}$

2) $3 \times 8 = \underline{\quad}$

3) $4 \times 6 = \underline{\quad}$

4) $2 \times 9 = \underline{\quad}$

5) $6 \times 4 = \underline{\quad}$

6) $8 \times 4 = \underline{\quad}$

7) $7 \times 5 = \underline{\quad}$

8) $9 \times 10 = \underline{\quad}$

9) $6 \times 6 = \underline{\quad}$

1) $6 \times \underline{\quad} = 18$

2) $8 \times \underline{\quad} = 16$

3) $\underline{\quad} \times 7 = 7$

4) $\underline{\quad} \times 9 = 45$

5) $7 \times \underline{\quad} = 21$

6) $\underline{\quad} \times 6 = 36$

7) $\underline{\quad} \times 8 = 40$

8) $9 \times \underline{\quad} = 90$

9) $\underline{\quad} \times 8 = 32$

10) $\underline{\quad} \times 6 = 24$

11) $7 \times \underline{\quad} = 63$

12) $\underline{\quad} \times 6 = 0$

13) $\underline{\quad} \times 8 = 80$

14) $9 \times \underline{\quad} = 54$

15) $6 \times \underline{\quad} = 42$

16) $\underline{\quad} \times 8 = 56$

17) $\underline{\quad} \times 9 = 81$

18) $6 \times \underline{\quad} = 30$

19) $8 \times \underline{\quad} = 48$

20) $\underline{\quad} \times 9 = 18$

21) $8 \times 6 = \underline{\quad}$

22) $7 \times 9 = \underline{\quad}$

23) $6 \times 7 = \underline{\quad}$

24) $8 \times 8 = \underline{\quad}$

25) $6 \times 3 = \underline{\quad}$

26) $9 \times 6 = \underline{\quad}$

27) $7 \times 5 = \underline{\quad}$

28) $8 \times 9 = \underline{\quad}$

29) $10 \times 7 = \underline{\quad}$

21) $\underline{\quad} \times 7 = 49$

22) $8 \times \underline{\quad} = 72$

23) $\underline{\quad} \times 6 = 48$

24) $9 \times \underline{\quad} = 45$

25) $\underline{\quad} \times 7 = 63$

26) $6 \times \underline{\quad} = 36$

27) $8 \times \underline{\quad} = 64$

28) $\underline{\quad} \times 6 = 42$

29) $\underline{\quad} \times 9 = 72$

30) $7 \times \underline{\quad} = 56$

31) $\underline{\quad} \times 8 = 48$

32) $6 \times \underline{\quad} = 60$

33) $9 \times \underline{\quad} = 45$

34) $\underline{\quad} \times 8 = 72$

35) $\underline{\quad} \times 7 = 28$

36) $9 \times \underline{\quad} = 81$





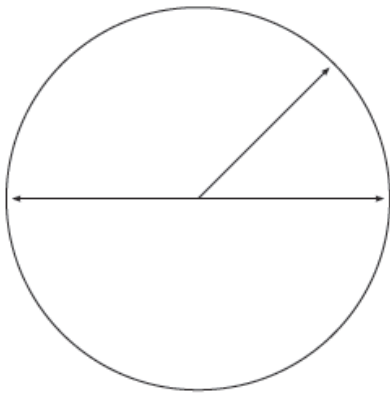
37) $\underline{\quad} \times 6 = 6$

38) $\underline{\quad} \times 8 = 64$

39) $7 \times \underline{\quad} = 49$

40) $\underline{\quad} \times 9 = 54$

Steps to Success

Date			
Subject/s	<u>Maths</u>		
Learning Objective 	To know the relationship between the radius and diameter		
		SA 	TA 
Success Criteria 	I know the radius is from the edge of the circle to the centre		
	I know the diameter is from one edge of the circle to another and		
	I know $D = 2r$		
Support	Independent	Adult Support ()	Group Work
Pre-task:			
			
Label the radius and the diameter			
If the radius is 16, what is the diameter?			

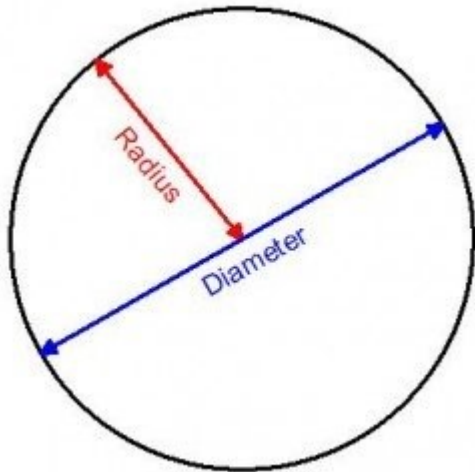
Teacher Led

<https://www.youtube.com/watch?v=5Ni53wpVO2I>

The radius goes from the edge of the circle to the centre point

The diameter goes from one edge to the other and passes through the centre point.

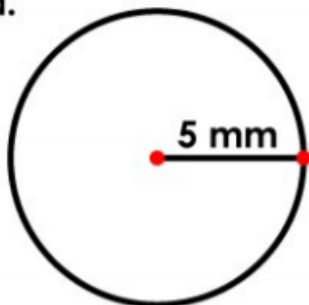
The diameter is twice the size of the radius. It can be written as $D = 2r$



My turn

If I know the radius of the circle is 5mm long.

a.

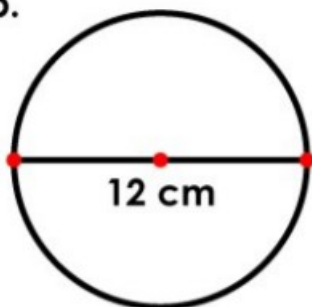


$$D = 2r$$

$$D = 2 \times 5$$

$$D = 10\text{mm}$$

b.



If I know the diameter of the circle is 12cm long.

$$D = 2r$$

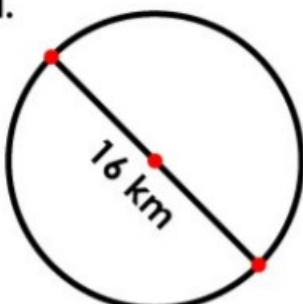
I know I need to half the diameter to get the radius.

$$12 / 2 = 6$$

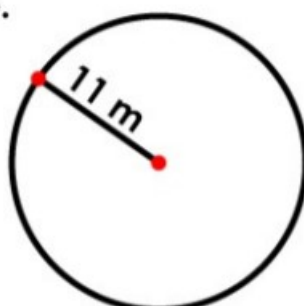
$$D = 6\text{cm}$$

Your turn

d.



e.

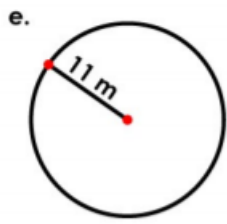


Drawing circles with a compass

You always set your compass to the size of the radius

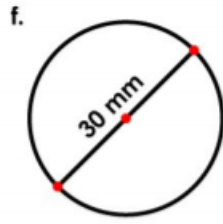
<https://www.youtube.com/watch?v=02XRad7s1Iσ>

Fluency



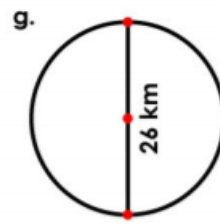
radius = _____

diameter = _____



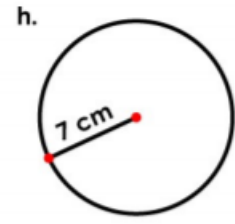
radius = _____

diameter = _____



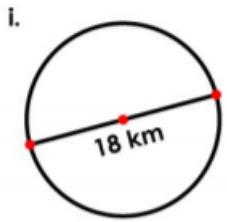
radius = _____

diameter = _____



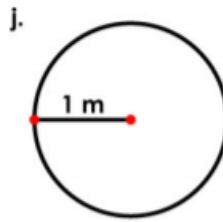
radius = _____

diameter = _____



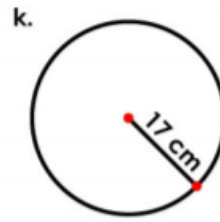
radius = _____

diameter = _____



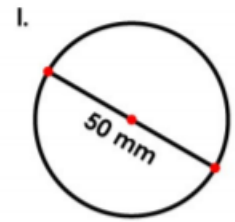
radius = _____

diameter = _____



radius = _____

diameter = _____



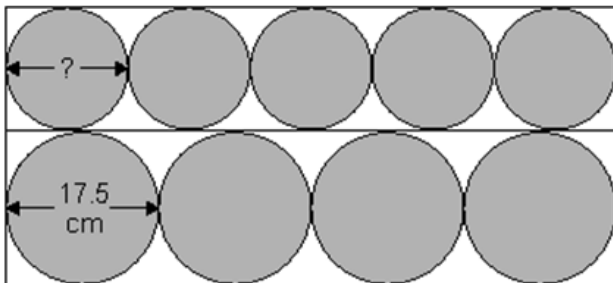
radius = _____

diameter = _____

- n. John has a round swimming pool. The distance from the center of the pool to the edge is 3 meters. What is the diameter of John's pool?

answer: _____

- Q1. Four large circles and five small circles fit exactly inside this rectangle.



Not actual size

The **diameter** of a large circle is **17.5** centimetres.

Calculate the **diameter** of a small circle.

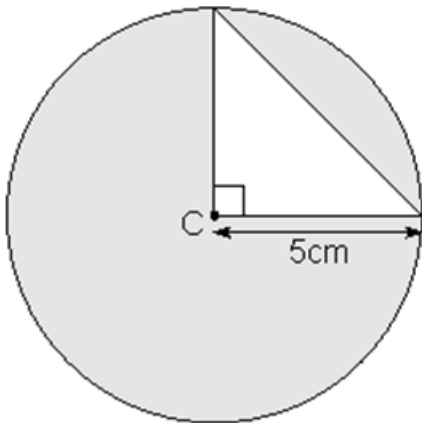
Show your **working**.
You may get a mark

cm

2 marks

Q1. The diagram shows a **right-angled triangle** inside a **circle**.

The circle has a radius of **5 centimetres**.



Calculate the **area** of the **triangle**.

	<input type="text" value=""/>
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cm²

1 mark

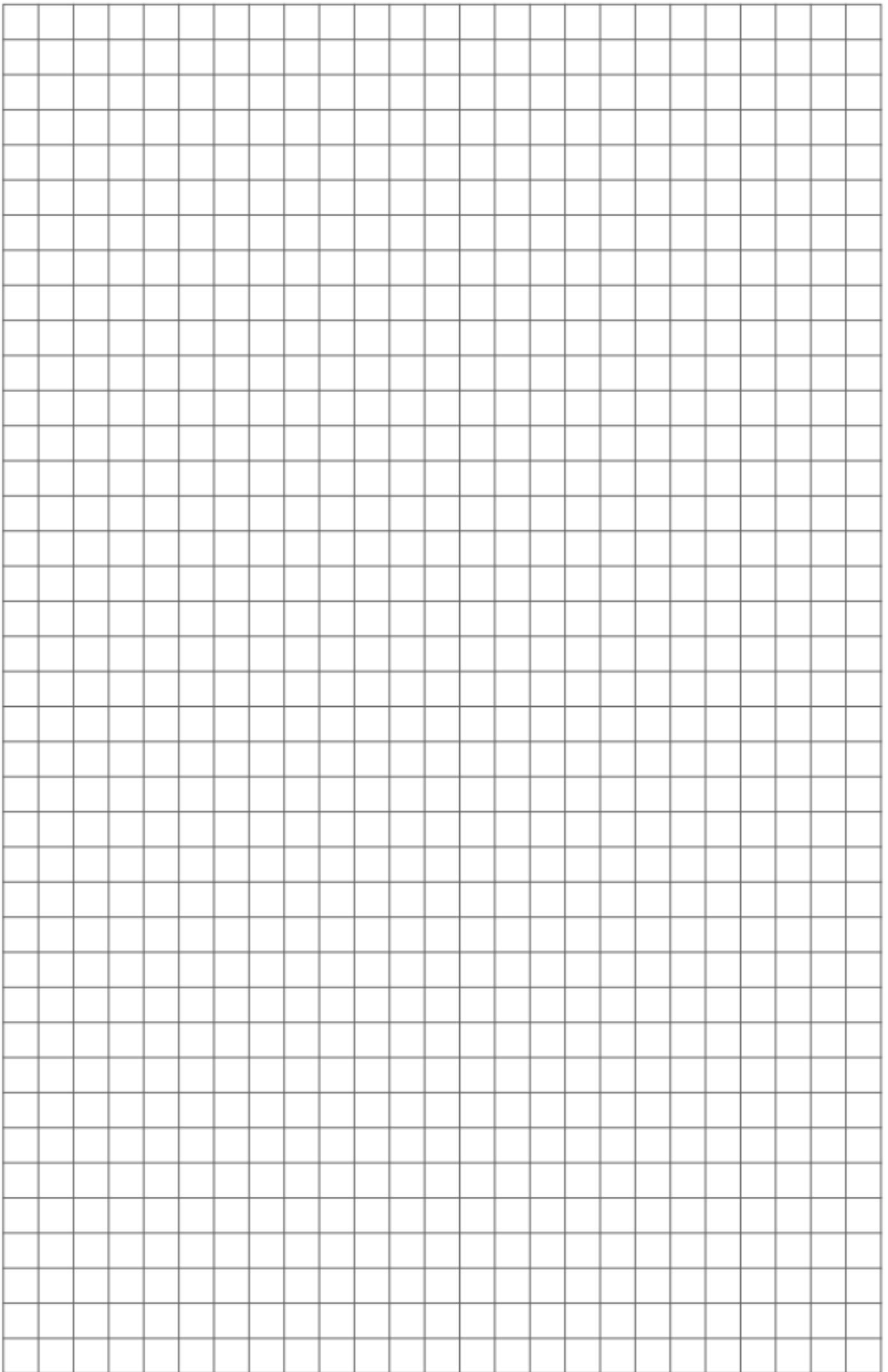
Draw a circle with a radius of 5cm

Draw a circle with a radius of 6cm

Draw a circle with a radius of 4.5cm

Draw a circle with a diameter of 14cm

Draw a circle with a diameter of 15cm



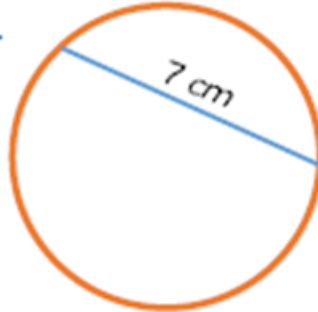
Problem Solving and Reasoning

Explain it!



Spot the mistake!

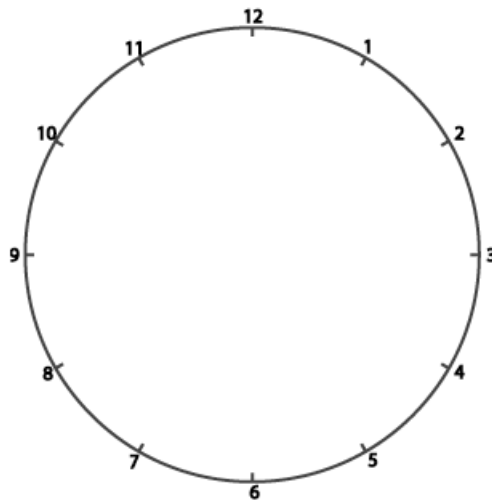
Ross has measured and labelled the diameter of the circle below. He thinks that the radius of this circle will be 3.5 cm.



Is Ross right? Explain why.

Further Challenge

Harry had a circle which was marked with twelve numbered dots to help him draw clock faces. The circle had a diameter of 10 cm.

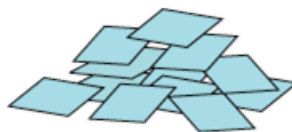


Harry drew lines from the 12 to the 3, from the 3 to the 6, from the 6 to the 9, and then back from the 9 to the 12.

What shape had he drawn?

Find the area of the shape.

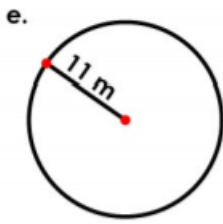
Harry had lots of centimetre square tiles.



He covered as much of his shape as he could with whole tiles without going over the edge.

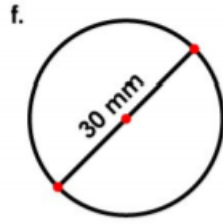
What was the largest number of whole tiles he could fit in?

Fluency Answers



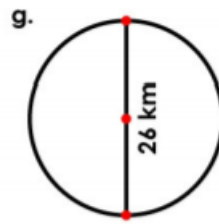
radius = **11 m**

diameter = **22 m**



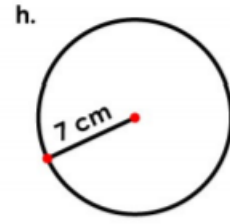
radius = **15 mm**

diameter = **30 mm**



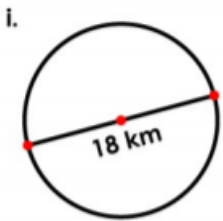
radius = **13 km**

diameter = **26 km**



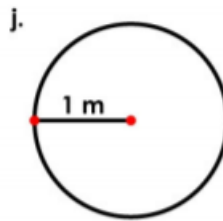
radius = **7 cm**

diameter = **14 cm**



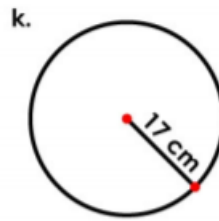
radius = **9 km**

diameter = **18 km**



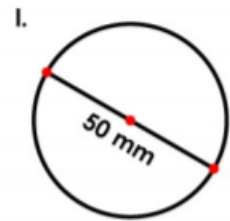
radius = **1 m**

diameter = **2 m**



radius = **17 cm**

diameter = **34 cm**



radius = **25 mm**

diameter = **50 mm**

- n. John has a round swimming pool. The distance from the center of the pool to the edge is 3 meters. What is the diameter of John's pool?

answer: 6 meters

M1. Award **TWO** marks for the correct answer of 14

If the answer is incorrect, award **ONE** mark for evidence of appropriate method, eg

$$17.5 \times 4 = 70$$

$$70 \div 5$$

Accept for **ONE** mark 140 OR 1.4 as evidence of appropriate method.

Answer need not be obtained for the award of **ONE** mark.

M1. (a) 12.5 OR $12\frac{1}{2}$

1

- (b) Award **TWO** marks for the correct answer in the range of 66 to 66.1 inclusive OR an answer based upon values obtained in **13a**.

If the answer is incorrect award **ONE** mark for evidence of an appropriate method, eg

- $(3.14 \times 5 \times 5) - 12.5$


The calculation need not be completed for the award of the mark.

Up to 2

[3]

Problem solving and reasoning answers

Ross isn't correct because the line does not go through the centre of the circle. Diameter has to go from one edge to another and pass through the centre point. The radius goes from the edge of the circle to the centre point.

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

$3 \times 4 =$

$7 \times 8 =$

$9 \div 3 =$

$36 \div 12 =$

$21 \div 7 =$

$8 \times 6 =$

$12 \times 4 =$

$10 \times 8 =$

$4 \times 8 =$

$3 \times 9 =$

$4 \times 7 =$

$3 \times 11 =$

$40 \div 8 =$

$15 \div 3 =$

$27 \div 9 =$

$20 \div 4 =$

$4 \times 11 =$

$48 \div 6 =$

$8 \div 4 =$

$6 \times 8 =$

$5 \times 8 =$

$11 \times 3 =$

$5 \times 8 =$

$80 \div 10 =$

$24 \div 4 =$

$88 \div 11 =$

$24 \div 3 =$

$4 \times 1 =$

$72 \div 8 =$

$8 \times 4 =$

$9 \times 4 =$

$8 \times 5 =$

$10 \times 3 =$

$16 \div 4 =$

$8 \times 11 =$

$6 \times 4 =$

$5 \times 4 =$

$32 \div 8 =$

$6 \div 3 =$

$3 \div 3 =$

$12 \div 3 =$

$3 \times 6 =$

$48 \div 12 =$

$44 \div 11 =$

$4 \times 9 =$

$8 \div 8 =$

$3 \times 4 =$

$7 \times 3 =$

$11 \times 8 =$

$4 \times 3 =$

$0 \times 8 =$

$12 \times 8 =$

$3 \times 12 =$

$48 \div 8 =$

$18 \div 3 =$

$28 \div 4 =$

$24 \div 8 =$

$30 \div 10 =$

$3 \times 3 =$

$56 \div 7 =$

$27 \div 3 =$

$8 \times 9 =$

$64 \div 8 =$

$4 \times 12 =$

$7 \times 4 =$

$10 \times 4 =$

$36 \div 4 =$

$5 \times 3 =$

$36 \div 9 =$

$16 \div 8 =$

$8 \times 8 =$

$56 \div 7 =$

$56 \div 8 =$

$8 \times 3 =$

$21 \div 3 =$

$4 \times 6 =$

$3 \times 0 =$

$72 \div 9 =$

$4 \times 12 =$

$32 \div 4 =$

$12 \div 4 =$

$3 \times 8 =$

$96 \div 12 =$

$12 \times 3 =$

$33 \div 3 =$

$4 \times 4 =$

$24 \div 8 =$

$7 \times 8 =$

$6 \times 3 =$

$9 \times 8 =$

$2 \times 3 =$

$9 \times 3 =$

$40 \div 4 =$

$4 \div 4 =$

$11 \times 4 =$

$21 \div 3 =$






$28 \div 7 =$

$3 \times 7 =$

$32 \div 8 =$

$8 \times 12 =$

Steps to Success

Date			
Subject/s	<u>Maths</u>		
Learning Objective	I can read and interpret pie charts		
			
		SA 	TA 
Success Criteria 	I can say what a pie chart has been split into using my knowledge		
	I can find fractions of amount by dividing by the denominator and		
	I can find percentages of an amount by using 100% is the whole		
Support	Independent	Adult Support ()	Group Work
Pre-task: There are 600 pupils at Coppingham Primary school. Work out how many pupils travel to school by: a) Train b) Car c) Cycling d) Walking			
Coppingham Primary School  ■ Walk ■ Cycle ■ Car ■ Train			

Teacher Led

A pie chart represents a total split up into parts, these might also be represented as fractions or percentages.

I can see that the pie chart below has been split into two halves. So each half is worth 300.

If 600 children were interviewed and their favourite colours were represented by the pie chart below, how many said blue was their favourite colour? And red?



I can see that the pie chart below has been split into $\frac{1}{4}$ (green) and $\frac{3}{4}$ (yellow).

If the total is 800

$\frac{1}{4}$ of 800 is 800 divided by 4 = 200

Green = 200 children

$\frac{3}{4}$ of 800 is 800 divided by 4 = 200 \times 3 = 600

Yellow = 600

To know I've done it correctly, I can add my two parts up and check they make a whole.

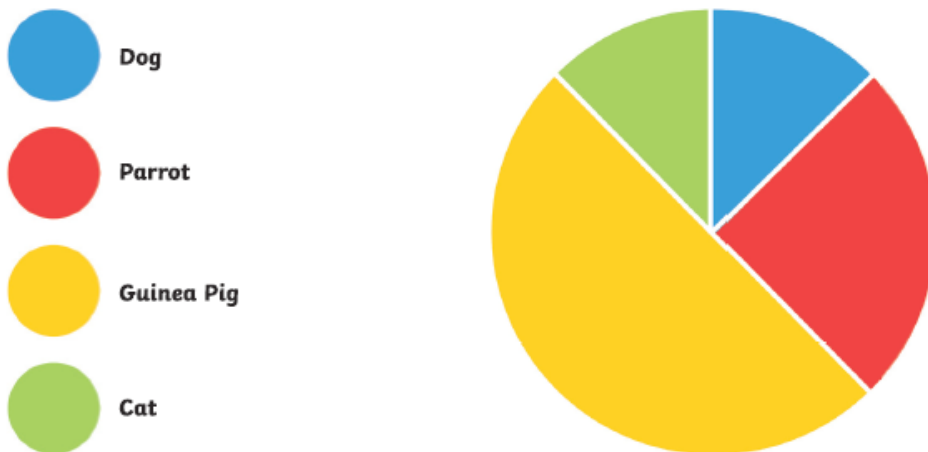
$600 + 200 = 800$

If 800 children were interviewed and their favourite colours were represented by the pie chart below, how many said green was their favourite colour? Yellow?



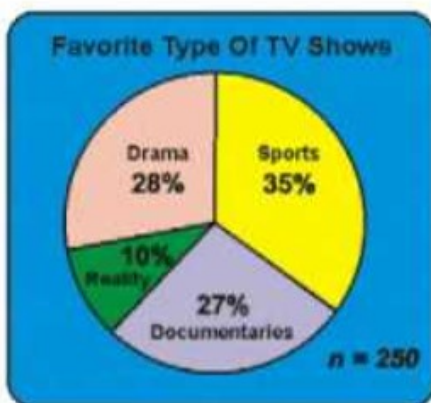
Your turn

Think about what fractions you can see and work out the amount for each animal.



This pie chart represents 40 children.

My turn



250 people were asked what their favorite type of show is to watch on TV. How many people responded that they prefer to watch sports or documentaries?

$$\text{Sports} = 35\%$$

$$100\% = 250$$

$$10\% = 25$$

$$5\% = 12.5$$

$$30\% = 75$$

$$35\% = 87.5$$

Fluency



This pie chart represents 400 children.

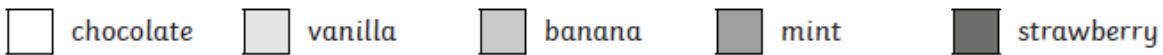
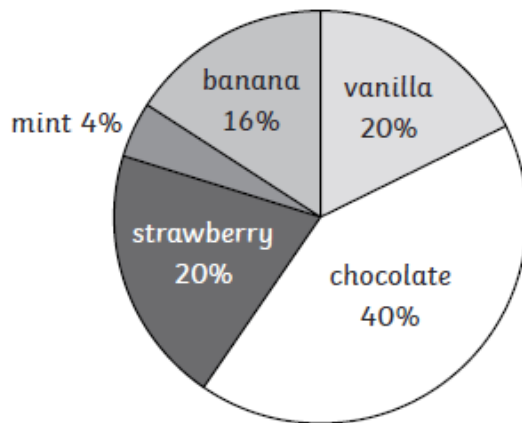


This pie chart represents 80 children.



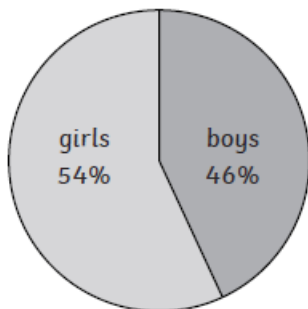
This pie chart represents 112 children.

Favourite Ice Cream Flavours

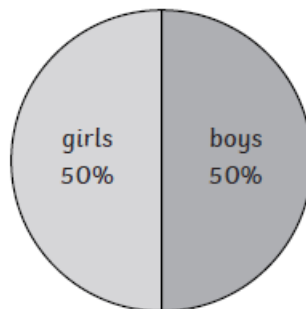


1. 50 people were asked about their favourite ice cream flavour. Use this information to answer these questions about the pie chart:

Boys and Girls in Year 5

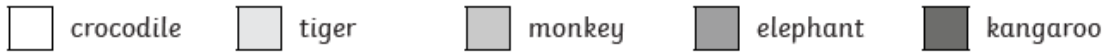
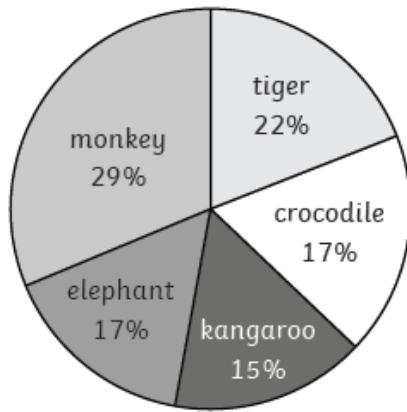


Boys and Girls in Year 6



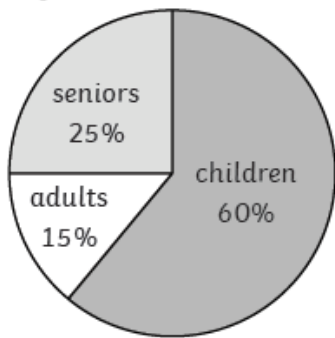
2. These pie charts show the number of boys and girls in a school in Year 5 and Year 6. There are 50 children in Year 5 and 60 children in Year 6.

Favourite Zoo Animals

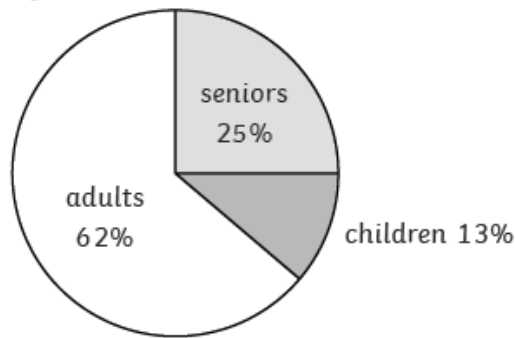


1. 200 people were asked about their favourite zoo animal. Use this information to answer

The Make-up of an Audience at an Afternoon Performance at a Theatre

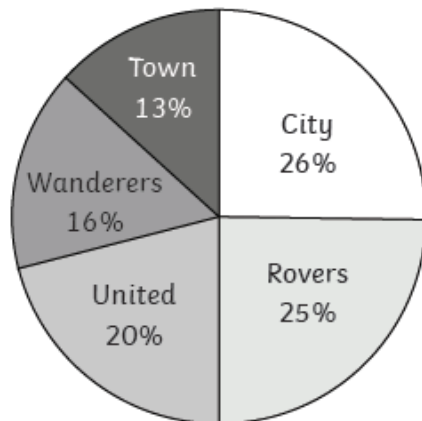


The Make-up of an Audience at an Evening Performance at a Theatre

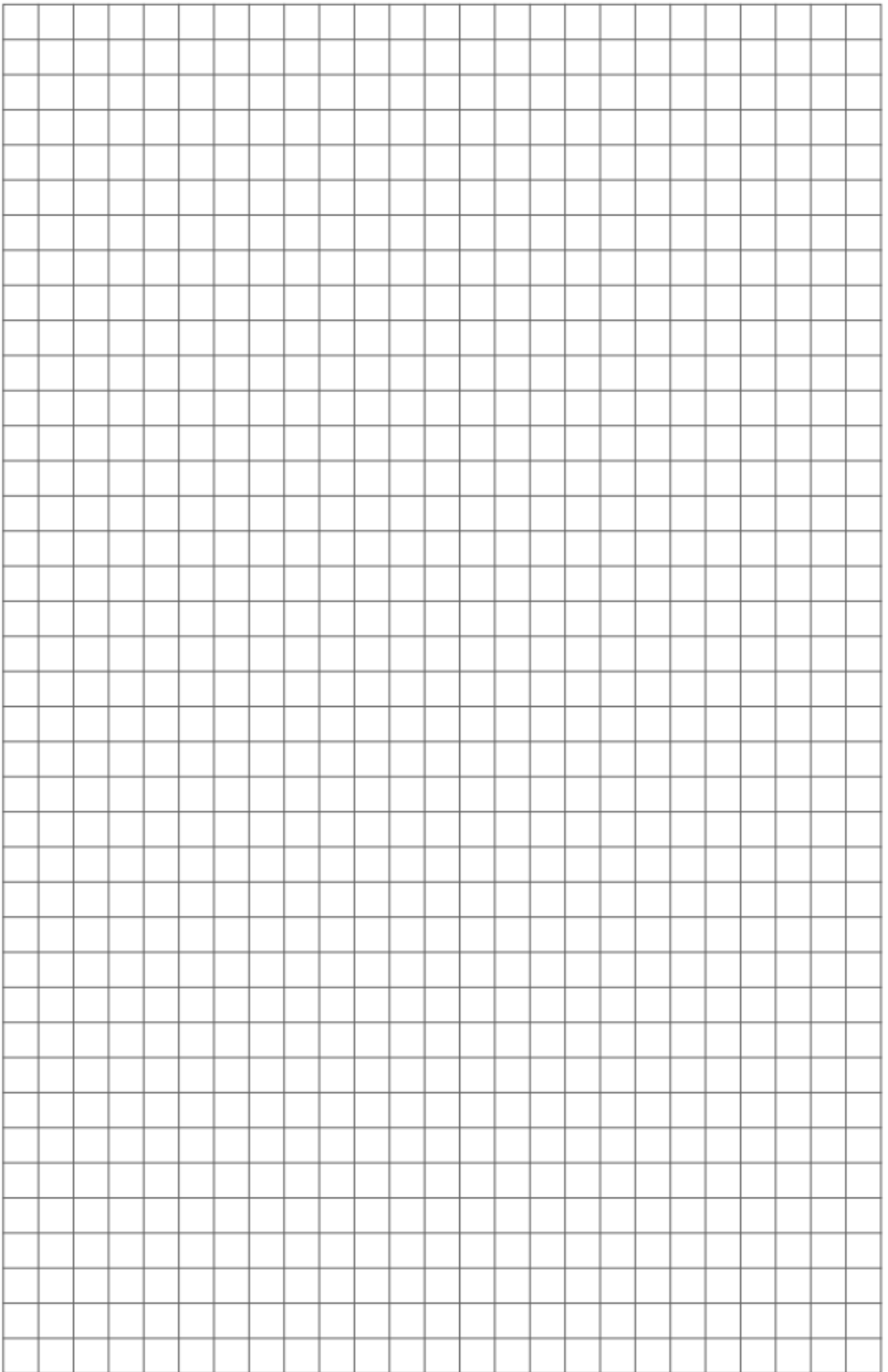


200 people went to the theatre one afternoon. The same evening, 500 people went to the same theatre. Answer the following questions about the pie chart:

Average Attendance at Football Grounds



1. This pie chart shows the average attendance over a season. Rovers' average attendance was 50 000. Answer these questions about the pie chart:



Problem Solving and Reasoning

Use it!



Classes in Year 2 and Year 5 were asked what their favourite drink was. Here are the results:



What fraction of pupils in Year 5 chose Fizzeraid?
 How many children in Year 2 chose Rolla Cola?
 How many more children chose Vomto than Spritz 'n' ting in Year 2?
 What's the difference between the number of Year 2 children that chose Spritz 'n' ting and the number of Year 5 children that chose Fizzeraid?

Explain it!



In a survey people were asked what their favourite season of the year was, the results are shown in the pie chart below. If 47 people voted spring, how many people took part in the survey?



Use it!



96 people took part in this survey.

Our favourite pets



Legend: Dogs (orange), Cats (blue), Hamsters (green), Horses (yellow)

How many people voted for cats?
 $\frac{3}{8}$ of the people who voted for dogs were male. How many females voted for dogs?
 What other information can you gather from the pie chart?
 Write some questions about the pie chart for your partner to solve.

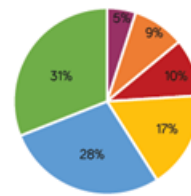


Use it!



13 people in this survey have no siblings. Use this information to work out how many people took part in the survey altogether.

Number of Siblings



Legend: No siblings (5%), 1 sibling (9%), 2 siblings (10%), 3 siblings (17%), 4 siblings (28%), 5 siblings (31%)

Now work out how many people each segment of the pie chart is worth. Can you represent the information in a table?

Explain it!



120 boys and 100 girls were asked which was their favourite subject. Here are the results:

Boys Favourite Subjects



Legend: Maths (50%), English (35%), Science (15%)

Girls Favourite Subjects



Legend: Maths (60%), English (20%), Science (20%)

Craig says:



More girls prefer Maths than boys because 60% is bigger than 50%.

Do you agree? Explain why.

Further Challenge

An ice cream stall sells vanilla, strawberry and chocolate ice creams.

The pie chart illustrates the sales of ice cream for the last Saturday.



The number of vanilla and the number of chocolate ice creams sold were the same.

The stall sold 60 strawberry ice creams.

How many chocolate ice creams were sold? Explain how you have worked it out.

Answers

① $\frac{400}{4}$
 Spring = $\frac{1}{4} = 100$
 Summer = $\frac{1}{2} = 200$
 Autumn = $\frac{1}{8} = 50$
 Winter = $\frac{1}{8} = 50$

② $\frac{80}{2}$
 English = $\frac{1}{2} = 40$
 P.E. = $\frac{1}{4} = 20$
 History = $\frac{1}{8} = 10$
 Art = $\frac{1}{16} = 5$
 IT = $\frac{1}{16} = 5$

③ $\frac{112}{2}$
 Pear = $\frac{1}{2} = 56$
 Banana = $\frac{1}{4} = 28$
 Mango = $\frac{1}{8} = 14$
 Pineapple = $\frac{1}{16} = 7$

Apple = $\frac{1}{32} = 3.5$
 Orange = $\frac{1}{32} = 3.5$

④ $\frac{50}{4}$
 Chocolate = $40\% = 20$
 Vanilla = $20\% = 10$
 Banana = $16\% = 8$
 Mint = $4\% = 2$
 Strawberry = $20\% = 10$

⑤ Year 5 $\frac{60}{2}$
 Girls = $54\% = 32.4$
 Boys = $46\% = 27.6$

Year 6 $\frac{60}{2}$
 Girls = $50\% = 30$
 Boys = $50\% = 30$

⑥ $\frac{200}{6}$
 Crocodile = $17\% = 34$
 Tiger = $22\% = 44$
 Monkey = $29\% = 58$
 Elephant = $17\% = 34$
 Kangaroo = $15\% = 30$

⑦ Theatre $\frac{200}{4}$
 Children = $60\% = 120$
 Adults = $15\% = 30$
 Seniors = $25\% = 50$

Evening $\frac{500}{4}$
 Adults = $62\% = 310$
 Seniors = $25\% = 125$
 Children = $13\% = 65$

⑧ $\frac{50000}{4}$
 City = $26\% = 13000$
 Rovers = $25\% = 12500$
 United = $20\% = 10000$
 Wanderers = $16\% = 8000$
 Town = $13\% = 6500$

Problem Solving and Reasoning Answers

Answer:

Spring is a quarter
of the whole pie
chart and there are
4 quarters in a
whole, so
 $47 \times 4 = 188$
people in total.


Answers:

)
 $\frac{1}{3}$ of 96 = 48,
)
 $\frac{1}{3}$ of 96 = 24,
)
 $\frac{1}{4}$ of 96 = 12
12 people voted
cats.
48 people voted
dogs.
)
 $\frac{1}{3}$ of 48 = 16
 $16 \times 5 = 80$
80 females voted.

No siblings	13
1 sibling	22
2 siblings	26
3 siblings	45
4 siblings	73
5 siblings	81
Total	260





Craig is incorrect
because the same
amount of girls and
boys like maths.

Boys:
50% of 120 = 60
Girls:
60% of 100 = 60

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

1	9 X 7		30	6 x 9		59	9 X 4	
2	8 x 4		31	12 x 3		60	7 x 6	
3	7 x 10		32	3 x 8		61	4 x 8	
4	9 x 9		33	8 X 8		62	12 X 2	
5	6 x 2		34	6 x 8		63	3 x 6	
6	4 x 7		35	11 x 7		64	4 x 10	
7	9 X 2		36	10 x 1		65	9 x 11	
8	12 x 12		37	10 x 5		66	3 x 12	
9	5 X 9		38	3 x 5		67	3 x 10	
10	7 X 7		39	12 x 11		68	4 X 4	
11	11 x 6		40	6 x 6		69	4 x 9	
12	5 x 11		41	2 x 9		70	4 x 11	
13	4 x 6		42	12 x 7		71	6 x 5	
14	9 x 5		43	11 x 8		72	7 x 2	
15	8 X 12		44	2 x 6		73	5 x 12	
16	10 x 10		45	4 x 5		74	2 x 10	
17	7 x 3		46	4 x 9		75	4 x 12	
18	5 x 8		47	8 x 2		76	7 x 8	
19	3 x 3		48	7 x 9		77	6 x 10	
20	10 x 11		49	12 x 8		78	12 x 6	
21	11 x 2		50	9 X 4		79	7 x 12	
22	2 x 7		51	5 X 5		80	2 X 2	
23	6 x 12		52	10 x 12		81	11 x 0	
24	5 x 7		53	8 x 11		82	2 x 12	
25	10 x 6		54	4 x 3		83	2 X 4	
26	9 x 12		55	2 x 5		84	8 x 5	
27	5 x 4		56	5 x 10		85	7 x 11	
28	11 x 11		57	9 x 3		86	9 x 6	
29	7 x 4		58	8 x 10		87	10 x 11	

Steps to Success

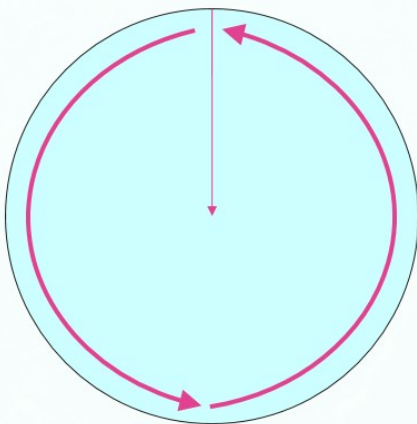
Date			
Subject/s	<u>Maths</u>		
Learning Objective	To draw pie charts		
			
		SA 	TA 
Success Criteria	I can use my knowledge of 360° in a circle		
	I know that the total = 360° e.g. If there are 60 children surveyed and 20 liked chocolate ice-cream 60 = 360°		
	I can use my knowledge of fractions and percentages in a whole		
	I can use a protractor to draw angles		
Support	Independent	Adult Support ()	Group Work
Pre-task:			
If there are 300 children in the school and 75 of them had 2 siblings. How many degrees would this be in a pie chart?			

1. Collect or identify your data

Imagine you have collected the following data about the eye colour of 60 people and you want to turn it into a pie chart:

Eye Colour	Number of People
Green	22
Blue	13
Brown	17
Other	8
Total	60

2. Understand the process



A circle is a full turn of 360° .

To find out how big each section of the pie chart needs to be, we need to find out how many degrees each datum represents.

3. Convert the data to degrees

Eye Colour	Number of People
Green	22
Blue	13
Brown	17
Other	8
Total	60

Divide 360 by the total size of your sample to calculate how many degrees each datum (the eye colour of each person) is equal to.

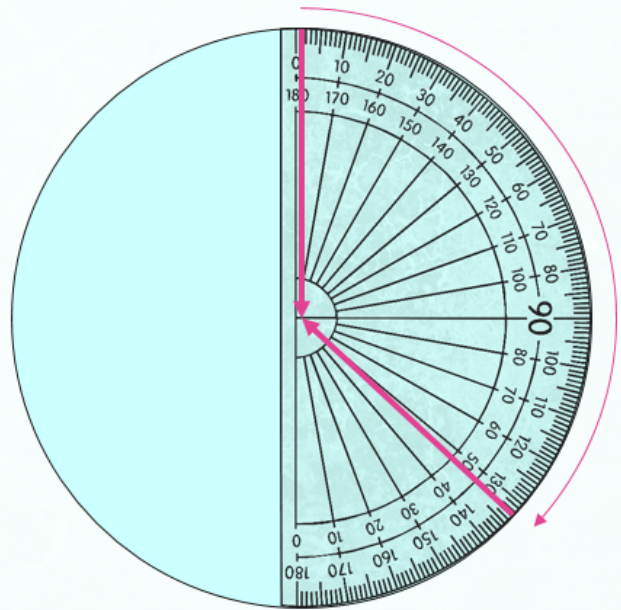
$$360 \div 60 = 6^\circ \text{ per person.}$$

Multiply the number of people in each data set by 6 to calculate the size of the angle for their sector in the pie chart.

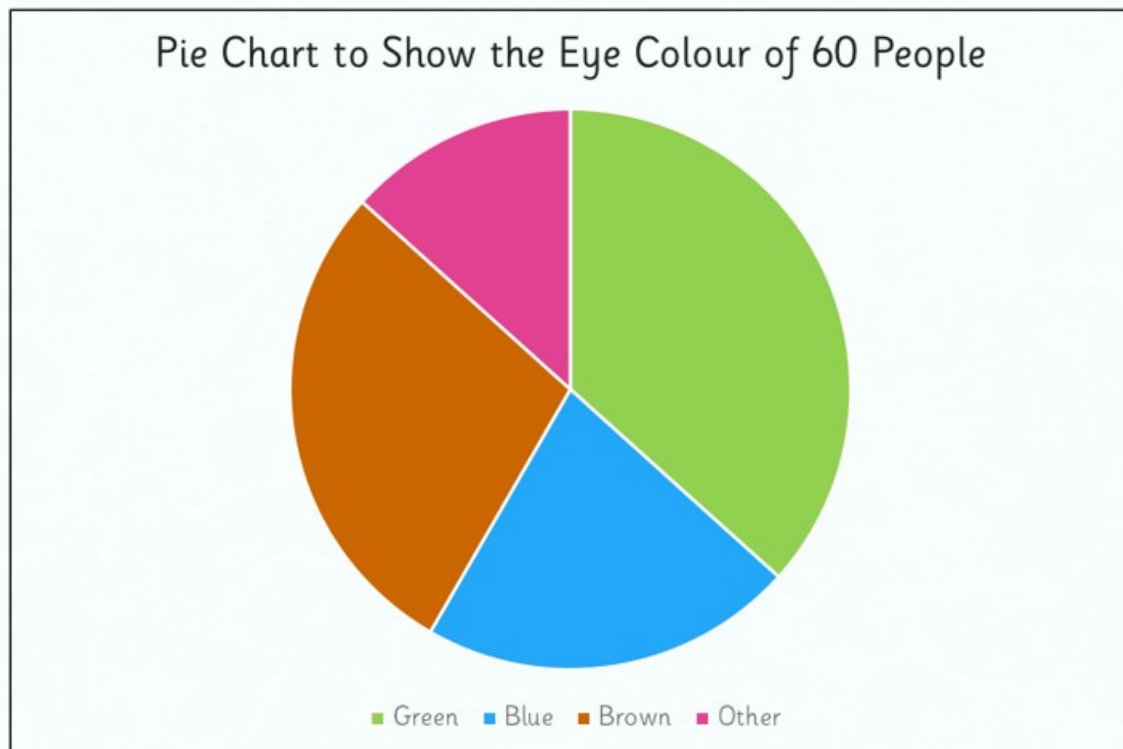
Eye Colour	Number of People	Calculation	Degrees in Pie Chart
Green	22	22×6	132
Blue	13	13×6	78
Brown	17	17×6	102
Other	8	8×6	48
Total	60	60×6	360

4. Drawing your pie chart

1. Draw a circle.
2. Mark the radius by joining the centre of the circle to the edge.
3. Place a protractor on the radius and measure the angle for your first data 'slice'.
4. Draw the line in to complete the sector.
5. Repeat for your remaining data.
6. You should find that you don't need to measure your last sector!



5. Label and colour your chart

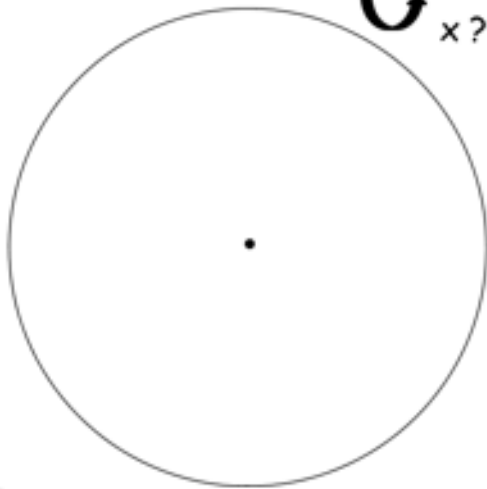


Fluency

1

Animals on Joe's farm

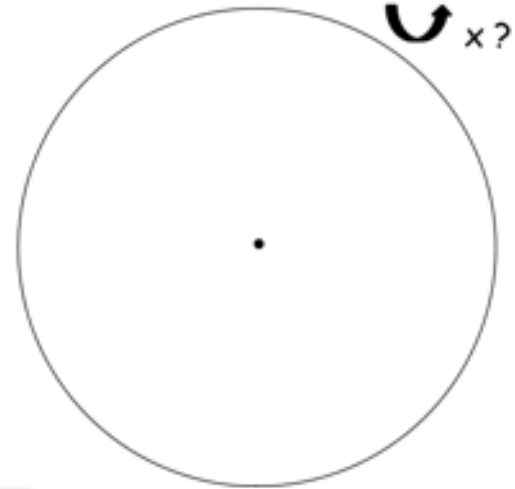
Cow	15	
Hen	12	
Pig	5	
Sheep	28	
	60	360



2

Drinks sold in a cafe

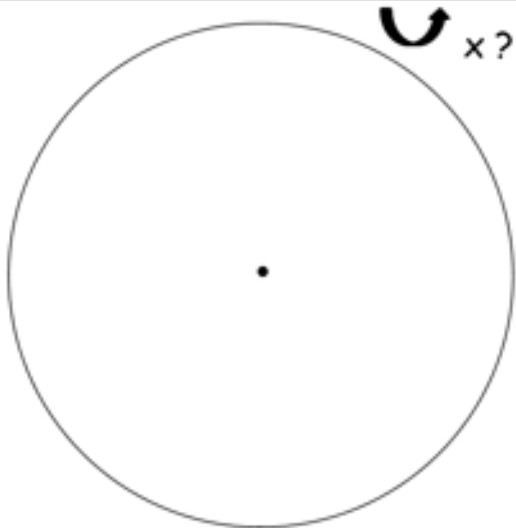
Hot chocolate	20	
Soup	15	
Coffee	35	
Tea	30	
	100	360



3

Favourite sport

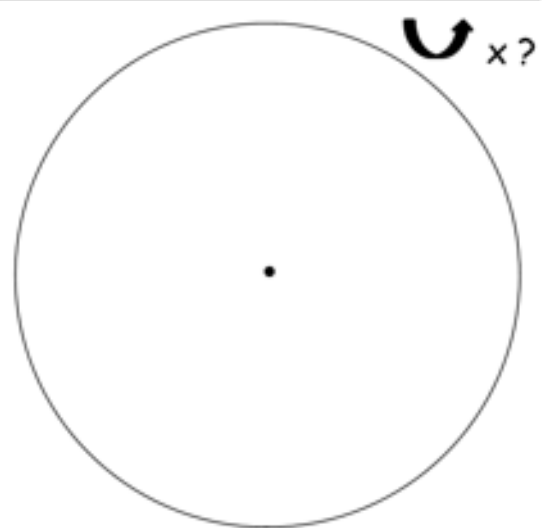
Rugby	36	
Football	52	
Cricket	24	
Basketball	8	
	120	360



4

Favourite subject

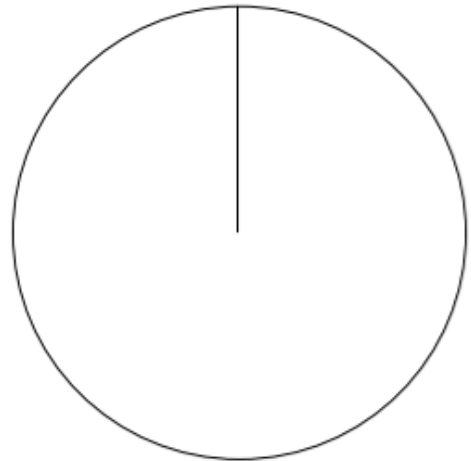
Maths	304	
English	224	
Art	138	
Science	54	
	720	360



Questions – Use the tables provided to calculate the size of each section of the pie chart then draw it on the circle provided:

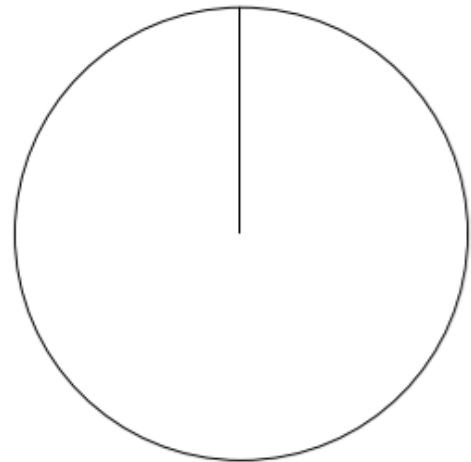
1)

Favourite football team	Number of people	Size of angle
Forest	10	
Derby	8	
County	3	
West Brom	15	
TOTALS		



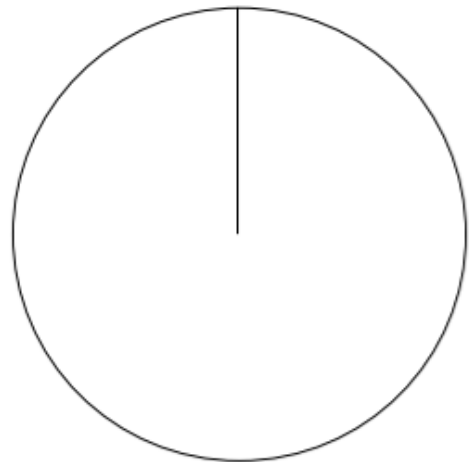
2)

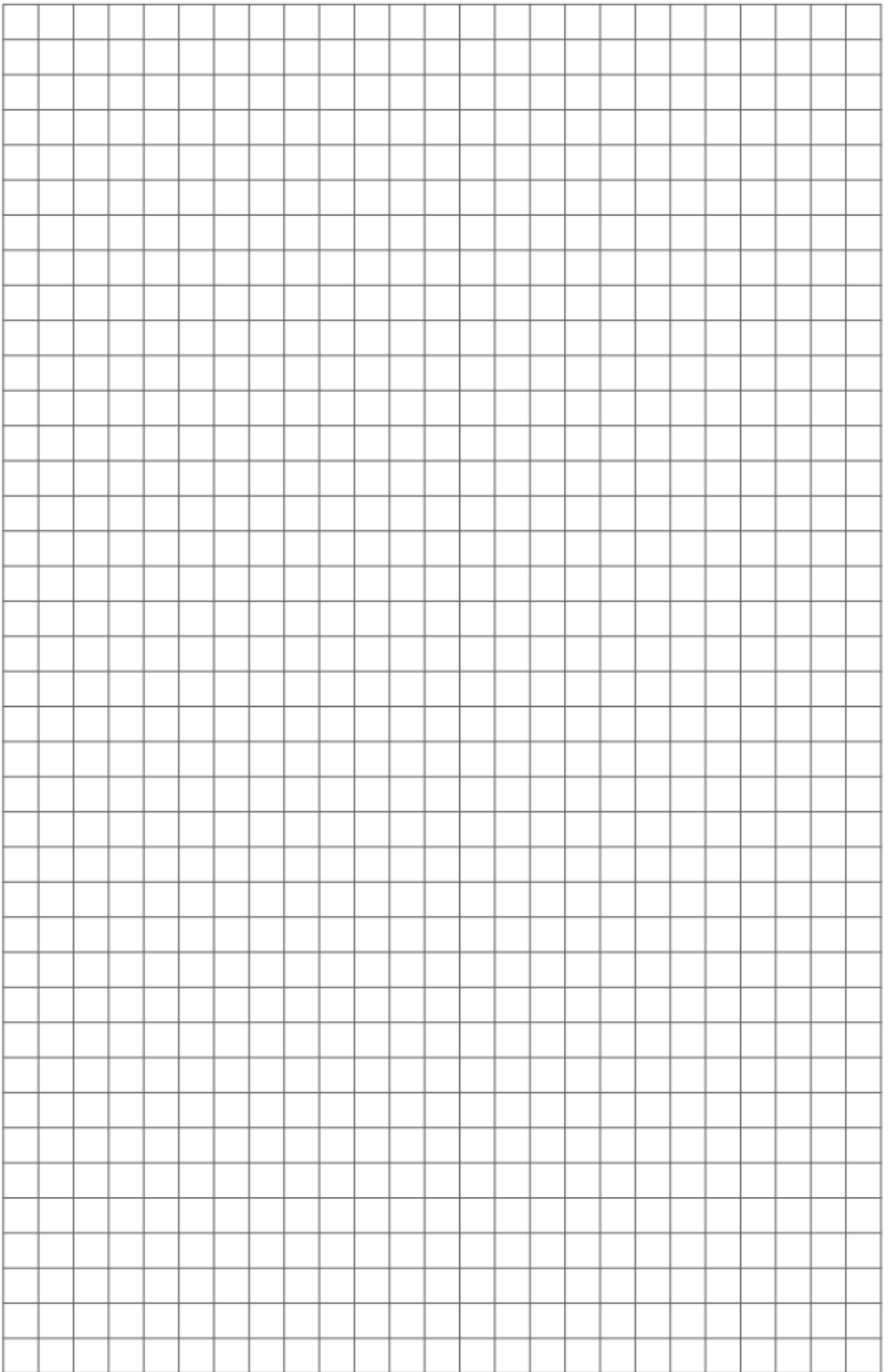
Favourite Food	Number of people	Size of angle
Sunday Dinner	3	
Fast Food	10	
Soup	1	
Fish Fingers	6	
TOTALS		



3)

Favourite Lesson	Number of people	Size of angle
Art	3	
Drama	4	
PE	15	
English	4	
Maths	4	
TOTALS		





Problem Solving and Reasoning

Use it!



A survey was conducted to work out Year 6's favourite sport. Work out the missing information and then construct a pie chart.

Favourite Sport	Number of Children	Convert to Degrees
Football	10	
Tennis	18	
Rugby		___ $\times 6 = 90^\circ$
Swimming	6	$6 \times 6 = 36^\circ$
Cricket		___ $\times 6 = 42^\circ$
Golf	4	$4 \times 6 = 24^\circ$
Total	60	360°

Use it!



A restaurant was working out which Sunday dinner was the most popular. Use the data to construct a pie chart.

Dinner Choice	Frequency	Convert to degrees
Chicken	11	
Pork	8	
Lamb	6	
Beef	9	
Vegetarian	6	
Total	40	360°

Explain it!



Miss Jones is carrying out a survey in class about favourite crisp flavours. 15 pupils chose salt and vinegar. How many fewer people chose ready salted?



Further Challenge

The pie chart shows the ingredients needed to make a breakfast cereal. 120 grams of almonds are used.

Estimate the quantity of each of the other ingredients.



Explain how you know

Answers

1. Cow = 90 degrees, Hen = 72 degrees, Pig = 30 degrees, Sheep = 168 degrees
2. Hot chocolate = 72 degrees, Soup = 54 degrees, Coffee = 126 degrees, Tea = 108 degrees
3. Rugby = 108 degrees, Football = 156 degrees, Cricket = 72 degrees, Basketball = 24 degrees.
4. Maths = 152 degrees, English 112 degrees, Art = 69 degrees, Science = 27 degrees

Problem Solving and Reasoning

1)

Favourite football team	Number of people	Size of angle
Forest	10	100
Derby	8	80
County	3	30
West Brom	15	150
TOTALS	36	

2)

Favourite Food	Number of people	Size of angle
Sunday Dinner	3	54
Fast Food	10	180
Soup	1	18
Fish Fingers	6	108
TOTALS	20	

3)


Favourite Lesson	Number of people	Size of angle
Art	3	36
Drama	4	48
PE	15	180
English	4	48
Maths	4	48
TOTALS	30	

Children will then use this to draw a pie chart.


Favourite Sport	Number of Children	Convert to Degrees
Football	10	$10 \times 6 = 60^\circ$
Tennis	18	$18 \times 6 = 108^\circ$
Rugby	15	$15 \times 6 = 90^\circ$
Swimming	6	$6 \times 6 = 36^\circ$
Cricket	7	$7 \times 6 = 42^\circ$
Golf	4	$4 \times 6 = 24^\circ$
Total	60	360°

Dinner Choice	Frequency	Convert to degrees
Chicken	11	$11 \times 9 = 99^\circ$
Pork	8	$8 \times 9 = 72^\circ$
Lamb	6	$6 \times 9 = 54^\circ$
Beef	9	$9 \times 9 = 81^\circ$
Vegetarian	6	$6 \times 9 = 54^\circ$
Total	40	360°

15 pupils = 180°
 $180 \div 15 = 12$
 $12^\circ = 1$ pupil
 $72 \div 12 = 6$ pupils
 $15 - 6 = 9$
 9 fewer students chose ready salted over salt and vinegar.

Date	
Subject/s	Maths
Learning Objective 	To recall and use multiplication and division facts

$2 \times 2 =$	$3 \times 3 =$	$4 \times 4 =$	$11 \times 10 =$
$3 \times 5 =$	$6 \times 8 =$	$7 \times 5 =$	$10 \times 2 =$
$4 \times 6 =$	$12 \times 5 =$	$8 \times 12 =$	$3 \times 12 =$
$7 \times 4 =$	$8 \times 6 =$	$10 \times 11 =$	$4 \times 9 =$
$10 \times 10 =$	$10 \times 12 =$	$4 \times 2 =$	$5 \times 7 =$
$9 \times 3 =$	$11 \times 2 =$	$10 \times 3 =$	$9 \times 8 =$
$7 \times 2 =$	$3 \times 9 =$	$6 \times 8 =$	$10 \times 7 =$
$11 \times 3 =$	$4 \times 11 =$	$12 \times 10 =$	$7 \times 8 =$
$10 \times 5 =$	$2 \times 5 =$	$2 \times 11 =$	$4 \times 3 =$
$2 \times 4 =$	$6 \times 10 =$	$8 \times 3 =$	$12 \times 4 =$
$5 \times 6 =$	$10 \times 9 =$	$3 \times 4 =$	$5 \times 8 =$
$7 \times 10 =$	$2 \times 12 =$	$4 \times 5 =$	$8 \times 8 =$
$9 \times 2 =$	$5 \times 3 =$	$7 \times 8 =$	$12 \times 2 =$
$3 \times 11 =$	$9 \times 4 =$	$8 \times 10 =$	$5 \times 4 =$
$10 \times 4 =$	$5 \times 5 =$	$2 \times 8 =$	$9 \times 5 =$
$8 \times 5 =$	$8 \times 8 =$	$8 \times 0 =$	$8 \times 11 =$
$9 \times 8 =$	$9 \times 10 =$	$4 \times 12 =$	$2 \times 10 =$
$4 \times 10 =$	$5 \times 2 =$	$12 \times 8 =$	$4 \times 7 =$
$3 \times 2 =$	$6 \times 3 =$	$3 \times 6 =$	$11 \times 5 =$
$7 \times 3 =$	$6 \times 4 =$	$5 \times 10 =$	$2 \times 3 =$
$4 \times 8 =$	$5 \times 11 =$	$8 \times 2 =$	$8 \times 9 =$
$5 \times 9 =$	$2 \times 6 =$	$3 \times 7 =$	$8 \times 4 =$
$12 \times 8 =$	$3 \times 10 =$	$11 \times 4 =$	$11 \times 8 =$
$2 \times 9 =$	$2 \times 7 =$	$5 \times 12 =$	$12 \times 3 =$
$10 \times 8 =$	$3 \times 8 =$	$0 \times 4 =$	$8 \times 7 =$

Date	
Subject/s	Maths
Learning Objective 	To apply and use the four operations

1	$104 - 10 =$	1 mark
2	$309 \times 4 =$	1 mark
3	$31 \times 5 =$	1 mark

4	$7.1 - 0.9 =$	1 mark
5	$7 \times 8 =$	1 mark
6	<input style="width: 50px; height: 20px;" type="text"/> $= 6479 + 588$	1 mark

7

$$2.222 + 0.3 =$$

1 mark

8

$$317 \times 1 =$$

1 mark

9

$$409 - 300 =$$

1 mark

10

$$\frac{5}{6} - \frac{1}{6} =$$

1 mark

11

$$0.561 \times 1000 =$$

1 mark

12

$$7^2 + 1 =$$

1 mark

13 $810 \div 9 =$

1 mark

14 $209 \cdot 78 =$

1 mark

15 $78.01 \times 10 =$

1 mark

16 $6700 - 923 =$

1 mark

17 25% of 3600 =

1 mark

18 $\frac{11}{12} + \frac{7}{12} =$

1 mark

19

$$327 \times 9 =$$

1 mark

22

$$5680 \div 4 =$$

1 mark

20

$$70 \times 60 =$$

1 mark

23

$$31.7 - 17.85 =$$

1 mark

21

$$50\,000 + 505 =$$

1 mark

24

$94 \times 26 =$

$$\begin{array}{r} 94 \\ \times 26 \\ \hline \end{array}$$

2 marks

26

$5040 \div 16 =$

$$\begin{array}{r} 16 \overline{) 5040} \\ \hline \end{array}$$

2 marks

25

$89\,402 - 45\,691 =$

1 mark

27

$\frac{1}{5} \times \frac{4}{5} =$

1 mark

28

$779 \times 68 =$

	7	7	9
x	6	8	

2 marks

29

$14 + 2 \times 6 =$

1 mark

30

$\frac{6}{7} \div 2 =$

1 mark

31

$10 \times 1\frac{1}{5} =$

1 mark

32

$3\frac{1}{2} + 1\frac{1}{6} =$

1 mark

33

$$3692 \div 71 =$$

$$\begin{array}{r} 7 \ 1 \overline{) 3 \ 6 \ 9 \ 2} \\ \end{array}$$

2 marks

34

$$\frac{2}{5} \div 5 =$$

1 mark

35

$$\frac{9}{10} - \frac{1}{3} =$$

1 mark

36

$$35\% \text{ of } 180 =$$

1 mark

Answers

question	answer	marks
1	94	1
2	1236	1
3	155	1
4	6.2	1
5	56	1
6	7067	1
7	2.522	1
8	317	1
9	109	1
10	$\frac{2}{3}$ or $\frac{4}{6}$	1
11	561	1
12	50	1
13	90	1
14	131	1
15	780.1	1
16	5777	1
17	900	1
18	$\frac{18}{12}$ or $\frac{3}{2}$ or $1\frac{6}{12}$ or $1\frac{1}{2}$	1
19	29.43	1
20	4200	1
21	50 505	1

question	answer	marks
22	1420	1
23	13.85	1
24	2444	2
25	43 711	1
26	315	2
27	$\frac{4}{25}$	1
28	52 972	2
29	26	1
30	$\frac{3}{7}$	1
31	12	1
32	$4\frac{2}{3}$	1
33	52	2
34	$\frac{2}{25}$	1
35	$\frac{17}{30}$	1
36	63	1
		Total 40