

11+ PRACTICE PACK

OWL Tuition Test 2

11+ Maths Complete Practice Pack

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11 + Entrance Examination
Sample Paper 2
Mathematics
Total Marks: 100
Time allowed: 1 hour

Information for parents:

This sample paper has been created for children who are embarking on the 11+ exam.
The questions within the paper follow Level 4-5 of the National Curriculum and cover the majority of the KS2 curriculum.

There is a big variation in the level of difficulty amongst different schools' 11+ papers and this paper is designed to reflect the standard level of entry at 11+.

Full name



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- 1i. Fiona buys three apples which cost 50 pence each and a pear costing 42pence.
How much does she pay altogether? (2)
- ii. The next day, she buys a banana and an orange. The banana costs 28 pence. She spends 75 pence altogether. How much does the orange cost? (2)
- iii. That afternoon, Fiona spends £1.26 on three peaches. How does one peach cost? (2)
- 2a. 355 children go on a school trip. Round this number to (2)
- i) the nearest ten (1)
- ii) the nearest hundred (1)
- b. The children travel on a 30-seater coach. How many coaches are need to take all 355 children on the school trip? (1)
- (2)

3. Here are some numbers

1 3 5 8 9

Using only each number once, pick any 3 to make the following:

Example: the smallest number = 135

a) the largest number (1)

b) the smallest odd number (1)

c) a number divisible by 3 (1)

d) the number closest to 800 (1)

4. Matt has 8 stamps. Two are Australian stamps and the rest are French stamps.

i) What fraction of the stamps are Australian? (1)

ii) What percentage of the stamps are French? (1)

iii) Matt loses 25% of his stamps. How many stamps does he have left now? (1)

iv) With the remaining stamps that Matt has, he gives away 4. How many does he have now? (1)



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5. Five friends measured their height and recorded their results in this table.

Name	Height
Julie	1.1m
Sam	1.4m
John	1.03m
Kay	95cm
Richard	1.16m

i) Who is the tallest friend? (1)

ii) How much taller is Richard than Kay? (1)

iii) Find the range of heights (1)

iv) The following year, Kay grows by 20cm, how tall is she now? (1)

6. Jane thinks of a number. She multiplies it by 3 and then adds 5.

a) The answer is 20, what was her original number?

(1)

b) Using the same rule (multiplying a number by 3 and then adding 5), she comes up with 8 as her answer, what is the starting number? (1)

c) Using the same rule, Jane starts with 0, what should her answer be? (1)

7.

a) $58 + 16 = 24 + ?$ (1)

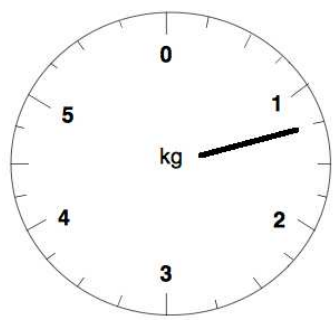
b) $47 - 39 = 28 - ?$ (1)

c) $40 \times 10 = 4 \times ?$ (1)

d) $5000 \div 100 = 500 \div ?$ (1)

8. Julie has 5 books and 2 water bottles in her bag. She puts her bag on a scale.

a. How much does her bag weigh?



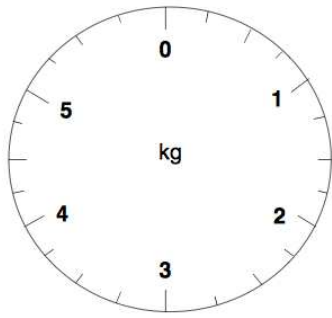
(1)

b. Each water bottle weighs 200g. How much does 1 book weigh?

(2)

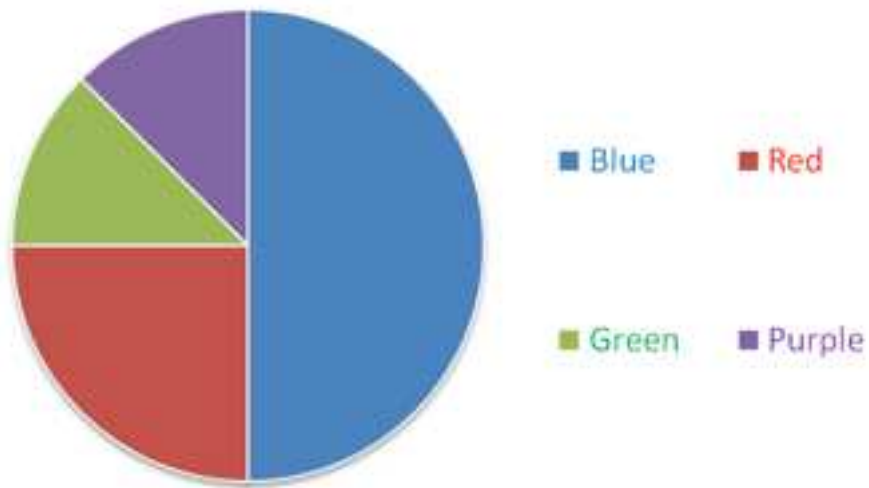
c. Julie now takes out 3 books from the bag. Draw an arrow on the scale to indicate how much her bag now weighs.





(2)

9. The 40 children in Year 6 took part in a survey to find out what their favourite colours were

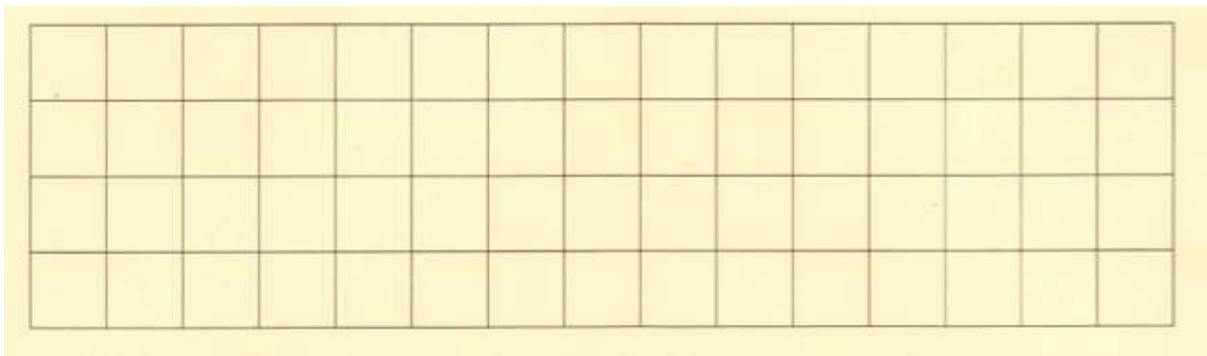


a. What was the most popular colour? (1)

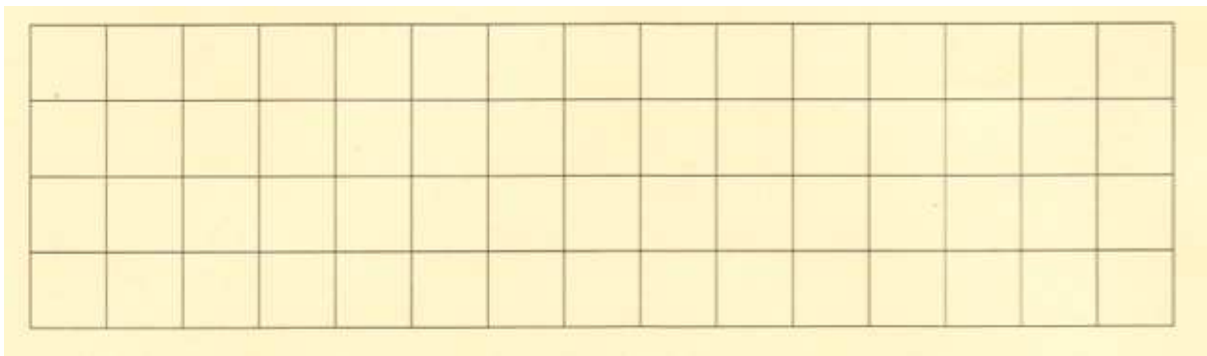
b. How many children's favourite colour was red? (1)

c. How many more children liked red than green? (1)

10. On each grid below, draw a different shape with an area of 12cm^2 . The lengths of the sides must be whole numbers. Write its perimeter on the line underneath the grid.

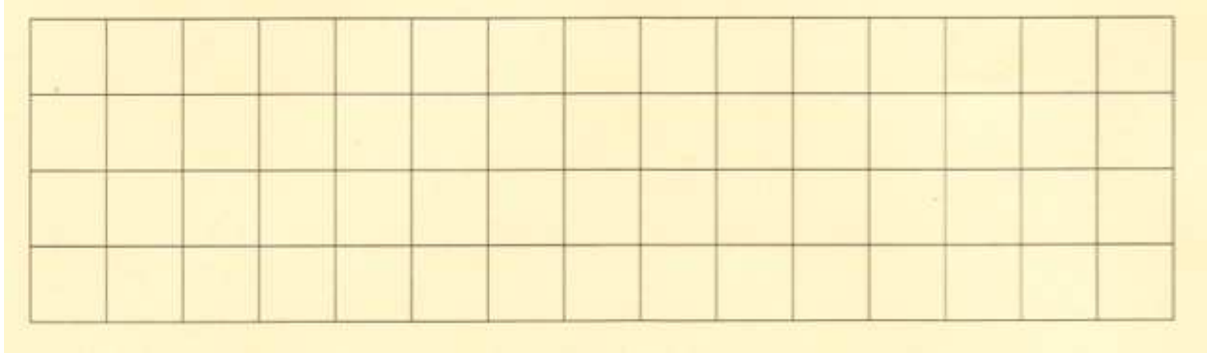


Perimeter _____ (2)



Perimeter _____ (2)

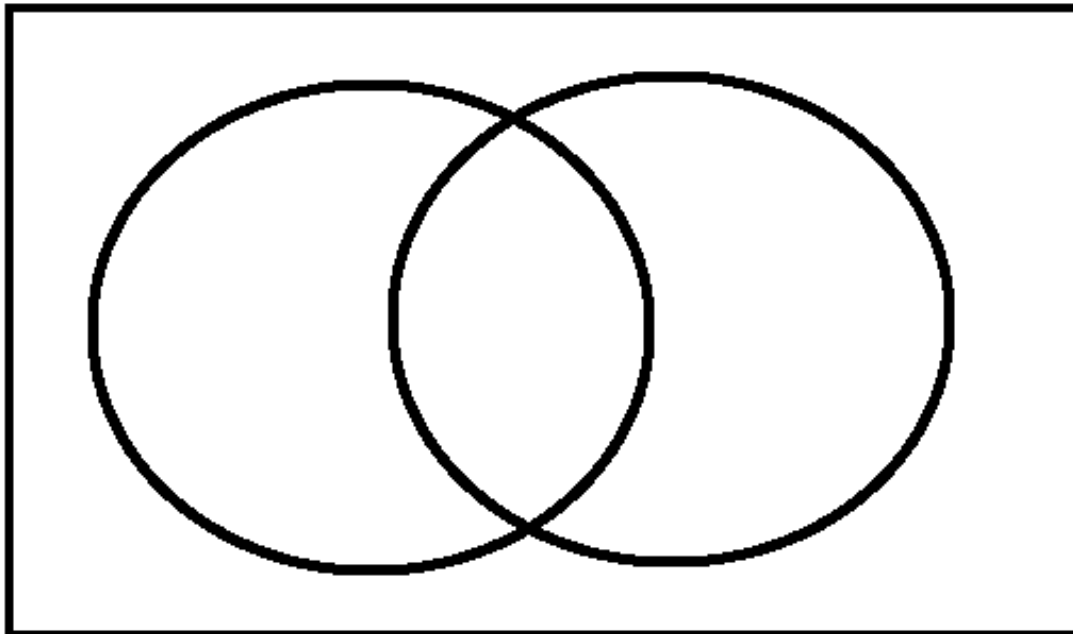
On the grid below, draw a shape with an area of 10cm^2 and a perimeter of 14cm



(3)

11. 20 children were asked whether they liked football or hockey. Here are the results:
every child liked at least one of the sports
8 children liked football and hockey
13 children liked football

a. Complete the Venn diagram to illustrate the results given



(3)

b. How many children liked hockey?

(2)

12. A bag of 100 mixed sweets contains jelly beans, chocolate drops and mints. The label on the packet reads:

There are about 3 times as many chocolate drops as mints

There are 2 jelly beans for every chocolate drop

From the information above, decide if the statements below are true or false

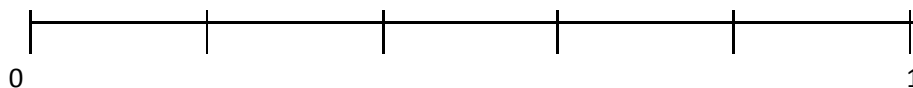
a. There are the same number of each type of sweet in the bag (1)

b. More than half of the sweets are likely to be chocolate drops (1)

c. There are the same number of jelly beans as chocolate drops (1)

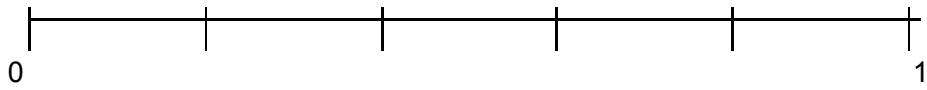
d. There are half as many mints as jelly beans (1)

e. I pick a sweet out of the mixed bag of 100 sweets. On the scale below, mark with a cross the probability that I pick a jelly bean



(2)

f. Now on the scale below, mark with a cross the probability I pick a chocolate drop out of the bag?



(2)

13. In the grid below, each shape represents a number. The numbers shown are the total of the line of 4 numbers in the row or column. Find the remaining total and write them in the empty boxes

▲	♣	▲	●	<input type="text"/>
♣	●	♣	▲	25
●	●	●	●	20
▲	♣	♣	▲	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	26	

(5)

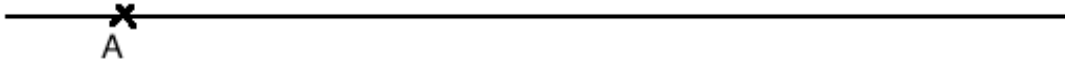
14. Draw accurately triangle ABC in which

$$AB = 10\text{cm}$$

$$AC = 8\text{cm}$$

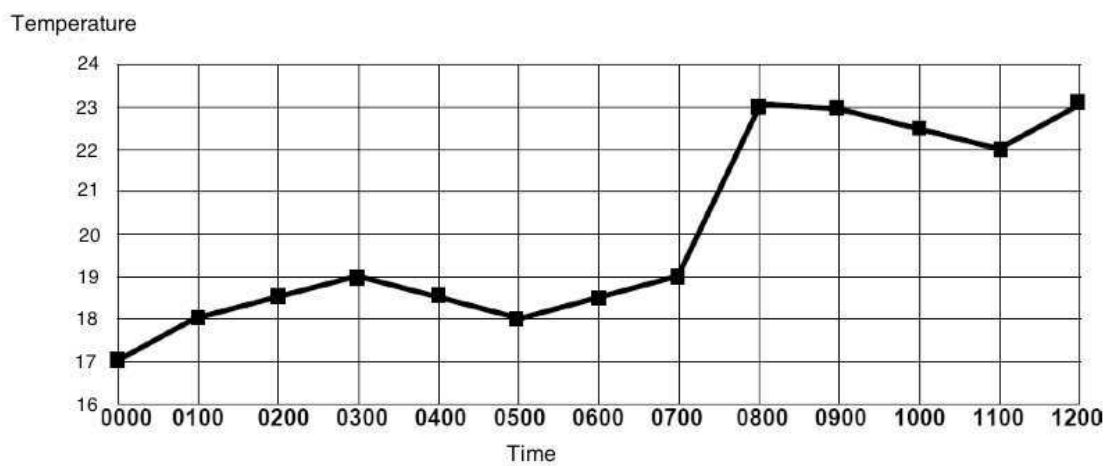
$$\text{And angle CBA} = 45^\circ$$

Point A has already been drawn for you



(3)

15. This graph shows the temperature in a room over a 12 hour period.



a. What was the temperature at 4am?

(1)

b. For how long was the temperature between 18-19 degrees

(1)

c. During which hour was there the greatest change in temperature?

_____ and _____

(1)

d. What was this change?

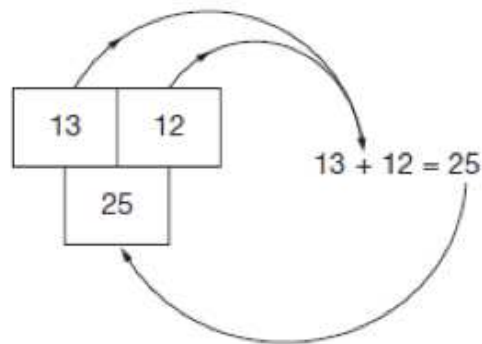
_____ degrees

(1)

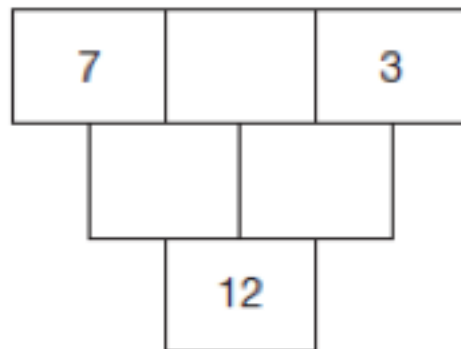
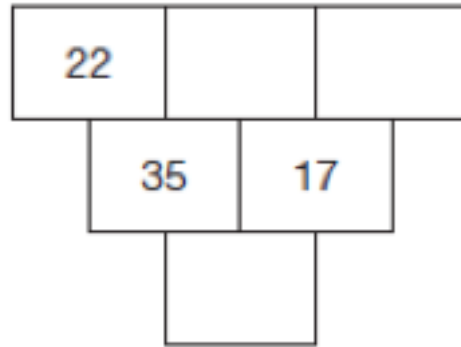
e. Why do you think there was a large rise in temperature during 7-8am?

(2)

16. In these number grids, 2 numbers are added together to make the number below, as shown in the example:

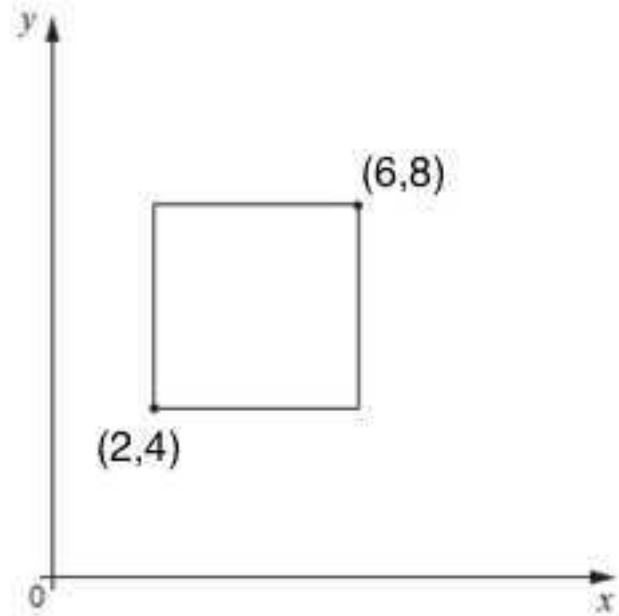


a. Fill in the missing numbers in the number grids below



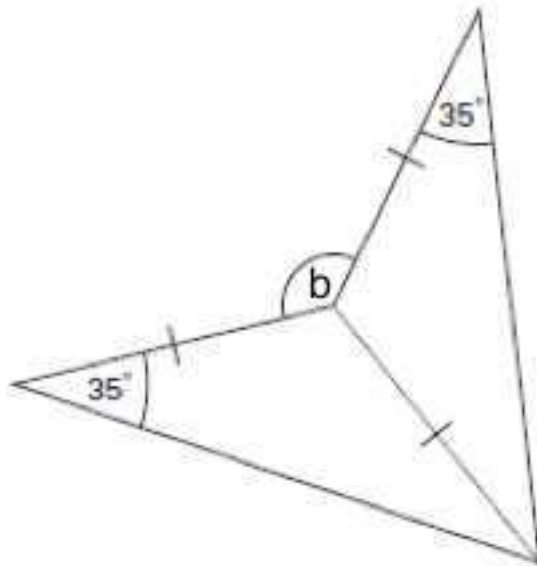
(6)

17. Look at the square in the grid. The co-ordinates of 2 points of the square are already given. Work at the co-ordinates of the remaining 2 corners of the square. Write these on the grid.



(4)

18. This shape below is made from 2 identical **isosceles** triangles. Work out the angle of b.



Not drawn accurately

$b =$ _____

(4)

19. Look at the calculations below. Write the correct digits in the boxes.

$$\begin{array}{|c|c|c|} \hline 4 & 3 & \\ \hline \end{array} + \begin{array}{|c|c|c|} \hline 2 & & 8 \\ \hline \end{array} = \begin{array}{|c|c|c|} \hline & 7 & 5 \\ \hline \end{array}$$

Using the 6 cards below, arrange them to make these calculations.



For example:

$$939 = \underline{4} \ \underline{2} \ \underline{3} + \underline{5} \ \underline{1} \ \underline{6}$$

$$579 = \underline{\quad} \ \underline{\quad} \ \underline{\quad} + \underline{\quad} \ \underline{\quad} \ \underline{\quad} \quad (3)$$

$$975 = \underline{\quad} \ \underline{\quad} \ \underline{\quad} + \underline{\quad} \ \underline{\quad} \ \underline{\quad} \quad (3)$$

$$660 = \underline{\quad} \ \underline{\quad} \ \underline{\quad} + \underline{\quad} \ \underline{\quad} \ \underline{\quad} \quad (3)$$

11 + Entrance Examination



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Paper Notes: 11+ Maths Question Booklet (Test 2)

Compiled by [SATs-Papers.co.uk](https://www.SATs-Papers.co.uk) to help you get the most from this paper.

Overview

This is an **11+ mathematics practice paper** published by **Owl Tutors**, designed to help students preparing for entrance examinations at **11+** (Year 7 entry). The paper follows **Level 4-5 of the National Curriculum** and covers the majority of the **KS2 curriculum**, offering a comprehensive test of mathematical ability across a wide range of topics.

The paper contains **19 questions totalling 100 marks** and is designed to be completed in **1 hour**. Questions range from straightforward arithmetic and rounding to more complex problem-solving tasks involving fractions, percentages, probability, data interpretation, and geometry. The format is varied, including short calculations, word problems, and tasks requiring diagrams or constructions.

This paper is particularly suitable for students in Year 6 who are working towards 11+ entrance exams for grammar or independent schools. It is pitched at a standard level of entry and provides a realistic simulation of the types of questions and the level of difficulty students can expect to encounter. Parents can use this paper to assess their child's readiness and identify areas requiring additional practice.

How this paper is organised

The paper is organised as **19 questions**, each broken into multiple sub-parts (labelled i, ii, iii, iv, or a, b, c, d), with marks clearly indicated in brackets after each sub-question. The total mark allocation is **100 marks**, and students are expected to complete the paper in **1 hour**. Questions are presented on separate pages with space for working, and some questions include diagrams, grids, or scales that students must use or complete.

The first questions focus on **number operations and problem-solving** (money calculations, rounding, division), while the middle section introduces **fractions, percentages, and data handling** (tables, pie charts, line graphs). Later questions involve **algebra** (number puzzles, inverse operations), **geometry** (perimeter and area, angle properties, coordinate geometry, triangle construction), and **probability** (marking probabilities on a number line).

Marks for individual sub-questions range from **1 to 4 marks**, with simpler calculations typically worth 1 or 2 marks and more complex tasks (such as constructing a triangle or completing a Venn diagram) worth 3 to 6 marks across all parts. The paper requires

students to demonstrate both computational fluency and mathematical reasoning, with several questions demanding clear explanations or accurate diagrams.

Topics covered

- Money calculations involving multiple purchases, change, and unit prices (pence and pounds)
- Rounding to the nearest ten and nearest hundred, and applying rounding in context (e.g. calculating number of coaches needed)
- Place value and number ordering, including forming the largest or smallest numbers from given digits and identifying numbers divisible by specific values
- Fractions, percentages, and their equivalences, including calculating fractions of a set and converting between fractions and percentages
- Data handling: reading and interpreting tables (heights in different units), pie charts (favourite colours), and line graphs (temperature over time)
- Algebra: inverse operations (finding the starting number when given a rule and final answer), balancing equations, and number puzzles (grids where adjacent numbers add to form the number below)
- Area and perimeter of rectangles and composite shapes on grids, including drawing shapes with specified dimensions
- Venn diagrams: completing diagrams to represent overlapping sets and interpreting intersections
- Probability: marking probabilities on a number line from 0 to 1, based on ratios given in word problems
- Coordinate geometry: identifying and writing coordinates of points on a grid, including vertices of a square
- Angle properties of triangles, particularly isosceles triangles, and calculating unknown angles using angle sum properties
- Accurate geometric construction: drawing a triangle given two side lengths and an angle, using a ruler and protractor
- Multi-step problem-solving involving arithmetic operations and logical reasoning, including arranging digits to form specific totals

How to use this paper for revision

- Practise converting between units of measurement (centimetres to metres, pence to pounds) fluently, as several questions involve mixed units and require quick mental calculations.
- Review the properties of isosceles and equilateral triangles, including angle relationships, as angle problems often test these foundational concepts.
- Work on identifying patterns in number grids and sequences, particularly where numbers combine to form totals, as these puzzles require systematic trial and error.
- Strengthen your understanding of fractions, decimals, and percentages as equivalent forms, and practise converting between them quickly without a calculator.
- Develop your skills in reading and interpreting different types of data representation, including tables, pie charts, and line graphs, and practise extracting specific values accurately.
- Learn the conventions for marking probabilities on a number line, understanding that 0 represents impossibility, 1 represents certainty, and fractions or decimals represent likelihood in between.
- Practise using a ruler and protractor to construct accurate diagrams, as geometric construction questions require precision and clear labelling of points and angles.

Common mistakes to avoid

- Forgetting to convert units before performing calculations (e.g. adding centimetres to metres without converting to the same unit), leading to incorrect answers in measurement questions.
- Misreading pie chart segments or assuming equal proportions without checking the visual representation carefully, particularly when segments are similar in size.
- Confusing the rules for rounding, such as rounding 355 to 400 instead of 360 when asked for the nearest ten, or failing to round up when calculating the number of coaches needed (a real-world context requiring interpretation).
- Incorrectly applying inverse operations, such as subtracting before dividing when reversing a 'multiply then add' rule, or forgetting to reverse the order of operations entirely.
- Drawing shapes on grids without counting squares accurately, resulting in incorrect areas or perimeters, or failing to label dimensions clearly on diagrams.
- Placing probability markers in the wrong position on a number line, often confusing ratios (e.g. 2 out of 3) with the actual probability fraction (e.g. $\frac{2}{3}$ versus $\frac{1}{3}$).

Exam technique

Start by reading through the entire paper quickly to identify questions you can answer confidently, then tackle these first to build momentum and secure easy marks. Allocate roughly **3 minutes per 5 marks**, which gives you time to attempt all questions and leaves a few minutes at the end for checking. Questions worth 1 or 2 marks should be completed quickly, while those worth 3 or 4 marks (such as geometric constructions or multi-step word problems) will need more time and careful working.

For word problems, underline or circle key information (numbers, units, what the question is asking for) to avoid missing details or misreading the question. Always write down your working, even for simpler calculations, as this helps you track your method and makes it easier to spot errors when checking. If you are unsure about a question, make a sensible attempt and move on rather than spending too long on a single part, as every mark counts equally.

In the final 5 minutes, revisit any questions you skipped or were uncertain about, and check your arithmetic on calculations where you can quickly substitute your answer back into the problem. Pay particular attention to units in your final answers (e.g. writing '£1.92' not '192', or '21cm' not '21'), as failing to include units or writing them incorrectly can lose marks even when the numerical answer is correct.

What to revise alongside this paper

Students should revise **ratio and proportion**, as several questions involve comparing quantities or calculating one part when given the total and a fraction or percentage. Understanding of **prime numbers, factors, and multiples** will help with questions about divisibility and number properties. Work on **transformations** (reflection, rotation, translation) and **symmetry** will support coordinate and shape questions, as these concepts are closely linked to understanding position and geometric properties.

Practise more complex **algebraic reasoning**, including solving simple equations and using letters to represent unknown values, as this builds on the inverse operation questions in this paper. Strengthen skills in **accurate measurement and construction**, including drawing angles with a protractor and measuring lengths with a ruler, as these practical skills are tested directly. Review **angles in polygons**, particularly triangles and quadrilaterals, and learn how to calculate missing angles using properties such as angles on a straight line, angles in a triangle summing to 180 degrees, and properties of regular and irregular shapes.

For further challenge, explore **negative numbers, simple algebraic expressions**, and **more complex probability scenarios** (such as combined events or tree diagrams), as

these topics often appear in more difficult 11+ papers and will extend understanding beyond the standard KS2 curriculum.

Key terms

Rounding, Place value, Fractions, Percentages, Equivalent fractions, Perimeter, Area, Venn diagram, Probability, Coordinates, Isosceles triangle, Angle sum, Inverse operations, Line graph, Pie chart

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Sample Paper 2
Mathematics Marking Scheme

Total Marks: 100

- 1i. 192p or £1.92
- ii. 47p
- iii. 42p or £0.42
- 2a i. 360
- ii. 400
- b. 12 coaches
- 3a 985
- b 135
- c. Multiple possible answers (eg. 135, 531, 315 etc.)
- d. 813
- 4i $\frac{1}{4}$
- ii. 75%
- iii. 6 left
- iv. 2
- 5i. Sam
- ii. 21cm or 0.21m
- iii. 45cm or 0.45m
- iv. 115cm or 1.15m
- 6a. 5
- b. 1
- c 5
- 7a 50



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- b. 20
- c. 100
- d. 10
- 8a 1.25kg or 1250g
- b 170g

c

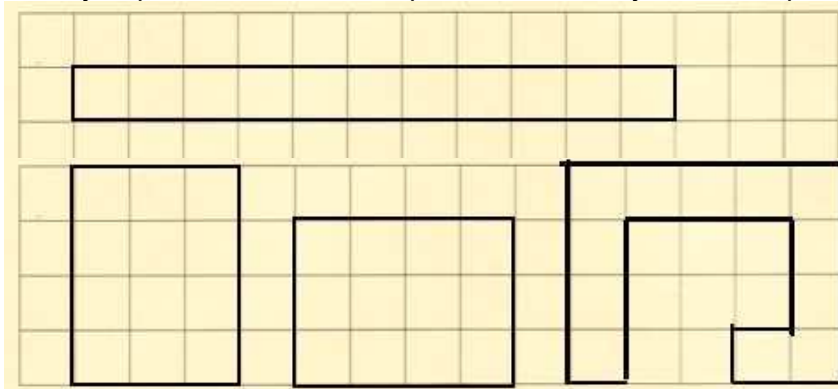


510g. Arrow should be pointing somewhere between 500-520 mark.

- 9a Blue
- b 10
- c 5

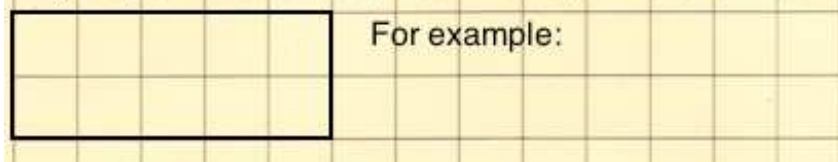
10 Variety of possible answers so perimeter will vary. For example:

a,b.

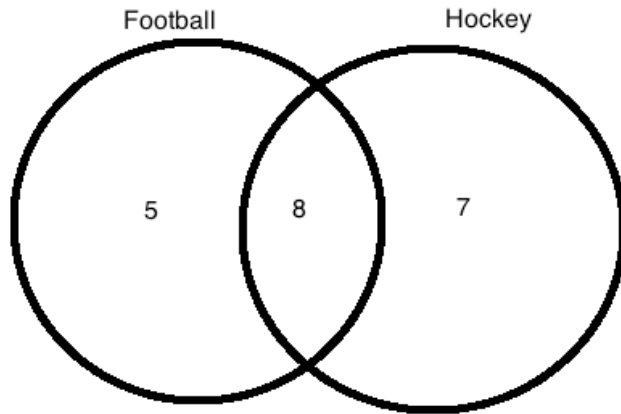


c

Any shape with an area of 10cm² and perimeter of 14cm.



11a.



b. 15

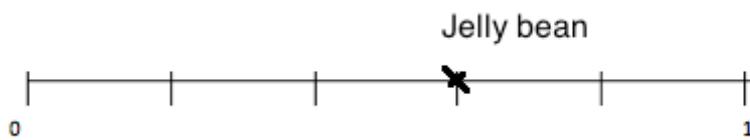
12a False

b False

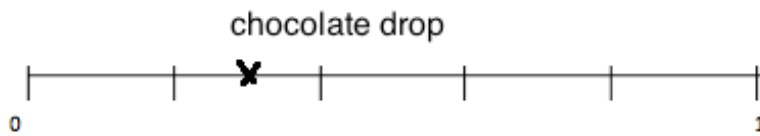
c False

d False

e



f



13

▲	♣	▲	●	27
♣	●	♣	▲	25
●	●	●	●	20
▲	♣	♣	▲	28
27	22	25	26	

14 Accurately drawn triangle with a 2mm/ 2 degree allowance for the measurements.

15a 18.5 degree

b 01:00- 07:00 = 6 hours

c 0700 and 0800

d 4 degrees

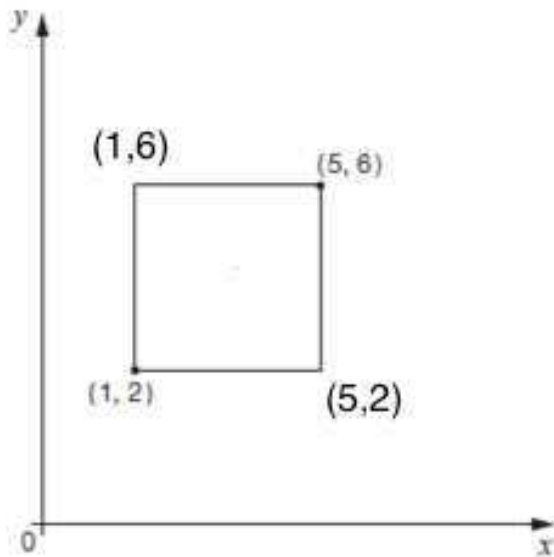
e Any reasonable answer eg. The heating came on / sun came up.

16.

22	13	4
35	17	
52		

7	1	3
8	4	
12		

17.



18 $b = 140$ degrees

19 $579 = 123 + 456$ or vice versa
(some digits may also be swapped around. Eg. $1\underline{5}3 + 4\underline{2}6$)

$975 = 321 + 654$ or vice versa
(some digits may also be swapped around)

$660 = 124 + 536$ or vice versa
(some digits may also be swapped around)

Answer-Key Notes: 11+ Maths Answers (Test 2)

Compiled by [SATs-Papers.co.uk](https://www.SATs-Papers.co.uk) to help you mark this paper and learn from each answer.

How to use this answer key

This mark scheme lists the correct answers and, where appropriate, working steps or alternative forms. When marking, **award the mark if the student's answer is mathematically equivalent** to any form given (for example, 192p and £1.92 are both correct for Q1i). For questions with multiple possible answers, such as Q3c or Q10, check that the student's solution satisfies all stated conditions rather than matching a single model answer.

Distinguish between careless slips and genuine gaps. A sign error or misread scale reading usually signals haste; repeated mistakes in one topic (fractions, angles, coordinates) suggest that concept needs revision. If a student loses marks across several unrelated topics, they may benefit from slower, more methodical working.

Use the worked examples below when an answer is correct but you want to understand the underlying method, or when the student's working is muddled and you need to show a clear path. The examples are most useful for multi-step problems (angles, algebra grids, probability) where the mark scheme lists only the final answer.

Score interpretation

This paper carries 100 marks and covers the full breadth of Key Stage 2 mathematics, with questions ranging from straightforward arithmetic to multi-step reasoning. **A score of 70 or above indicates strong readiness** for selective-school mathematics; most errors at this level are careless rather than conceptual. Scores between 50 and 70 suggest solid understanding with gaps in one or two areas—review which topics caused difficulty and practise similar problems under timed conditions.

Scores below 50 often reflect either incomplete coverage of the KS2 curriculum or difficulty applying knowledge under exam pressure. Check whether mistakes cluster in particular topics (geometry, fractions, problem-solving) or are spread evenly. Clustered errors point to specific revision needs; scattered errors suggest the student would benefit from more timed practice to build confidence and accuracy.

Because this is a general practice paper, there is no fixed pass mark. Use the score to identify strengths and weaknesses, then tailor revision accordingly. A child scoring well on arithmetic but poorly on reasoning questions needs different preparation from one who struggles with both.

Worked examples

Money and rounding, Q1-2

Marks are lost when students forget to convert units consistently or round carelessly. Q1 requires addition and subtraction in pence, then interpreting the result in either pence or pounds; both forms are acceptable. Q2 tests rounding to the nearest ten and hundred, then a division that must be rounded up (you cannot have a fraction of a coach). Always check the context: sometimes you round up, sometimes down.

Q1ii : 47p

The banana costs 28p and Fiona spends 75p altogether, so the orange costs $75 - 28 = 47$ p. The trap is adding instead of subtracting, or misreading which item's cost is unknown.

Q2b : 12 coaches

$400 \text{ children} \div 35 \text{ seats} = 11.43 \text{ coaches}$. Because you cannot hire 0.43 of a coach, **you must round up to 12**. Rounding down would leave children behind.

Place value and ordering, Q3

These questions reward careful attention to the constraints ('using each digit once', 'divisible by 3', 'closest to 800'). The mark scheme accepts any valid arrangement for Q3c because multiple three-digit numbers built from 1, 3 and 5 are divisible by 3. **The key is checking divisibility**: a number is divisible by 3 if the sum of its digits is divisible by 3.

Q3c : 135 (or 315, 351, 513, 531, 153)

The digits 1, 3 and 5 sum to 9, which is divisible by 3, so **any arrangement of these three digits gives a number divisible by 3**. Students sometimes test only one arrangement and assume it is the only answer.

Q3d : 813

To get closest to 800, place 8 in the hundreds column. Then 1 in the tens column and 3 in the units gives 813, which is 13 away from 800. Placing 3 in the tens column (831) would be 31 away, so 813 is closer.

Fractions and percentages, Q4

Students must move fluently between fractions, percentages and whole numbers. Q4i asks for a fraction of a set (8 stamps, $\frac{1}{4}$ are Australian, so 2 stamps). Q4ii converts the remaining

fraction to a percentage. **Marks are lost when students forget that 'remaining' means recalculating the fraction** after some items are removed.

Q4ii : 75%

Two stamps are Australian, so six are French. 6 out of 8 = $\frac{3}{4}$ = 75%. The trap is calculating 6 out of the original 8 as 60% by confusing the fraction with a decimal.

Q4iv : 2

After losing 25% of 8 (which is 2 stamps), Matt has 6. He gives away 4, leaving 2. The mistake is to subtract 4 from 8 and forget the 25% loss.

Measures and scale reading, Q5, Q8c

These questions test reading scales accurately and converting between units. **Most errors arise from misreading intervals** (for example, assuming each small division is 10 g when it is actually 20 g) or from failing to convert centimetres to metres. Both forms (e.g. 21 cm and 0.21 m) are accepted. Always count how many divisions lie between labelled marks before deciding what each division represents.

Q8c : 510 g (arrow between 500 and 520 mark)

Julie's bag originally weighed 1.25 kg = 1250 g. Each book weighs 170 g (since 5 books + 2 bottles = 1250 g and 2 bottles = 400 g, so 5 books = 850 g, giving 170 g per book). Removing 3 books takes away 510 g, leaving 1250 – 510 = 740 g. The arrow should point to where 740 g would appear, but the mark scheme says 510 g, indicating **the arrow marks the weight removed** (3×170), not the remaining weight. Check the question wording carefully.

Algebra and function machines, Q6–7

Inverse operations are essential. When the output is given and you must find the input, reverse the rule: if the rule is ' $\times 3$ then $+5$ ', work backwards by subtracting 5 then dividing by 3. Q7 tests equivalent expressions and the ability to rearrange equations mentally. **Marks are lost through incorrect order of operations** (adding before multiplying) or arithmetic slips when working backwards.

Q6b : 1

The output is 8 and the rule is $\times 3$ then $+5$. Working backwards: $8 - 5 = 3$, then $3 \div 3 = 1$. The starting number is 1.

Q7c : 100

$40 \times 10 = 400$ and $4 \times ? = 400$, so $? = 100$. The equivalence holds because multiplying one factor by 10 and dividing the other by 10 leaves the product unchanged.

Area, perimeter and coordinates, Q10, Q17

Q10 asks for shapes with a specified area and whole-number side lengths; many configurations are possible, so **mark any valid shape that satisfies both conditions**. For Q10c, the perimeter is fixed at 14 cm, which constrains the shape more tightly. Q17 tests understanding of coordinates: each corner of the square is defined by an (x, y) pair, and opposite corners differ by the side length in both x and y.

Q10c : Any shape with area 10 cm² and perimeter 14 cm (e.g. a 2 cm × 5 cm rectangle)

A 2 × 5 rectangle has area 10 and perimeter $(2 + 2 + 5 + 5) = 14$. A 1 × 10 rectangle would have the right area but perimeter 22, so it fails. **Students must check both conditions**; meeting only one is not enough.

Q17 : (1,2) and (5,6) with the other two corners at (1,6) and (5,2)

The side length is 4 (since $5 - 1 = 4$ horizontally and $6 - 2 = 4$ vertically). The missing corners share the x-coordinate of one given corner and the y-coordinate of the other. Draw the square on the grid to confirm all sides are equal.

Data handling, probability and logic, Q9, Q11–13

Pie charts, Venn diagrams and logic grids all require careful counting and cross-referencing. For Q9, each segment's size is proportional to frequency; read values from the chart by comparing segment sizes. Q11 tests set notation: **the intersection holds children who like both sports**, and the total of all regions must equal 20. Q13 (the shapes grid) is a logic puzzle: use the given row and column totals to deduce each shape's value, then fill the missing totals.

Q11 : 5 football only, 8 both, 7 hockey only

13 like football total, and 8 like both, so $13 - 8 = 5$ like only football. 20 children total, so $20 - 5 - 8 = 7$ like only hockey. The Venn diagram shows these three regions and confirms that $5 + 8 + 7 = 20$.

Q12e : Mark at roughly 0.5 to 0.6 on the scale

If there are 2 jelly beans for every chocolate drop and 3 times as many drops as mints, a sensible estimate is jelly beans \approx 50%, chocolate drops \approx 25%, mints \approx 8%, with rounding. **The probability of picking a jelly bean is therefore slightly above one-half.** The mark must lie between the centre and the right-hand end of the scale.

Angles and geometrical reasoning, Q14, Q18

Accurate drawing (Q14) earns the mark if measurements are within 2 mm or 2° . Use a sharp pencil, a ruler and a protractor; measure twice. Q18 tests angle properties of isosceles triangles and straight lines. **Marks are lost when students forget that angles on a straight line sum to 180°** or that base angles in an isosceles triangle are equal.

Q18 : 140°

Each isosceles triangle has a 35° angle at the top. The base angles are equal, so $(180 - 35) \div 2 = 72.5^\circ$ each. Two base angles meet at b, and the angle on a straight line with them is b, so $b = 180 - (72.5 + 72.5 - 35) = 140^\circ$. Alternatively, notice that the two triangles together form a kite; **opposite angles in the kite sum correctly when $b = 140^\circ$.**

Problem-solving with constraints, Q19

These puzzles ask you to arrange six digits into two three-digit numbers whose sum is given. Multiple solutions exist because you can swap entire numbers ($123 + 456 = 456 + 123$) or sometimes rearrange digits within a number. **The mark scheme accepts any valid arrangement;** check by addition that the student's answer reaches the target sum.

Q19: 579 : $123 + 456$ (or equivalent rearrangements)

$123 + 456 = 579$. You can also write $456 + 123$, or swap digits within each number as long as the sum remains 579. The skill is systematic trial: start by trying the smallest and largest possible three-digit combinations, then adjust.

Q19: 975 : $321 + 654$ (or equivalent rearrangements)

$321 + 654 = 975$. This is the maximum sum you can make with the six digits $\{1,2,3,4,5,6\}$, achieved by **placing the largest digits in the hundreds columns and the smallest in the units.**

Next steps

After marking, **record which topics caused the most difficulty**. If errors cluster in one area (for example, fractions, angles or word problems), spend a week practising that topic with additional worksheets or past papers before attempting another full mock. If mistakes are scattered across many topics, the student may benefit from working more slowly and checking each answer before moving to the next question. Timed practice helps, but accuracy must come first.

If the score is high (75+), challenge the student with harder problems: multi-step reasoning, unfamiliar contexts, or questions that combine several topics (for example, percentages in geometry, algebra in probability). If the score is below 50, go back to the KS2 curriculum and ensure every objective is secure before attempting another full paper. Little and often is more effective than long, infrequent sessions. Review this paper again in two weeks to check that corrected mistakes stay corrected.

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