

11+ PAST PAPER PACK

The King's School 11+ Maths

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THE KING'S SCHOOL

C H E S T E R

ENTRANCE EXAMINATION
MATHEMATICS
Specimen Paper

Time allowed: 45 minutes

- Answer as many questions as you can.
- Write your answers in the spaces provided.
- Show any working in the spaces between the questions.
- If you cannot answer a question, go on to the next one. Return to it later if you have time.
- Calculators may not be used.

1. Calculate the following, showing your working clearly

(i) $12.31 + 1.75$

Answer.....

(ii) $2.76 - 1.842$

Answer.....

(iii) 128×47

Answer.....

(iv) 110×0.2

Answer.....

2. Place the following numbers in order of size from smallest to largest:

4.2101

4.1021

4.0121

4.0211

Answer

3. Circle the amounts below which can be made using three UK coins

71p

72p

73p

74p

75p

4. Divide 623 by 8, giving your answer and the remainder.

Answer.....remainder

5. Complete the boxes with +, −, ×, ÷ to make the statements correct. The first one has been done for you as an example.

$$8 \quad \boxed{\times} \quad 3 = 28 \quad \boxed{-} \quad 4$$

(i) $21 \quad \boxed{} \quad 3 = 5 \quad \boxed{} \quad 2$

(ii) $18 \quad \boxed{} \quad 6 = 120 \quad \boxed{} \quad 12$

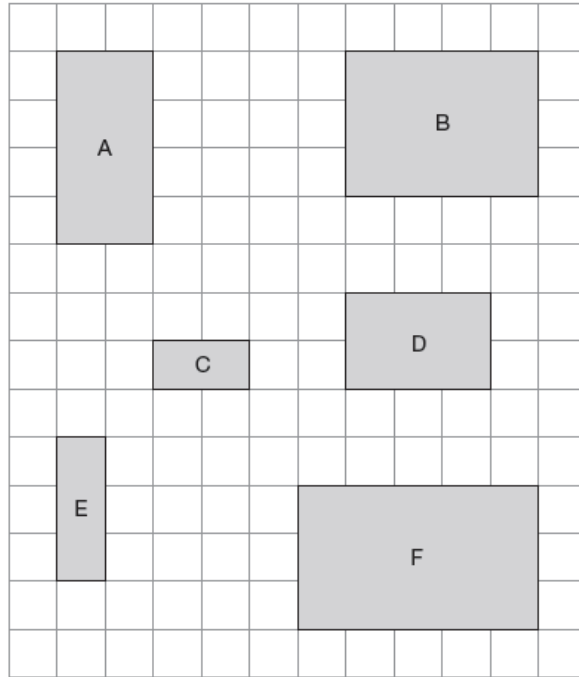
6. (i) Round 12.7 to the nearest whole number

Answer.....

- (ii) Round 44 350 to the nearest 1000

Answer.....

7. Two of the shapes below fit together to make a square. Which are they?



Answer..... and

8. Write these fractions in order of size from the smallest to the largest.

$$\frac{1}{2}$$

$$\frac{3}{8}$$

$$\frac{1}{3}$$

$$\frac{5}{12}$$

$$\frac{7}{24}$$

.....

.....

.....

.....

.....

9. Write down the next term for each of these sequences.

(i) 3 7 11 15

(ii) 303 300 297 294

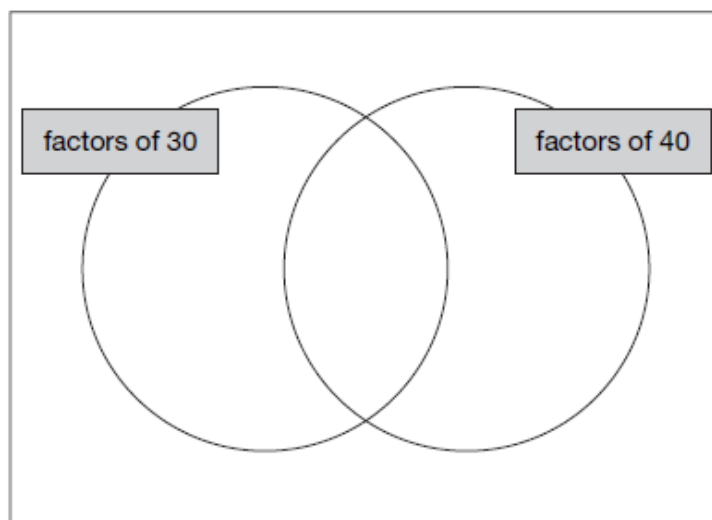
(iii) 1 1 2 3 5 8

Find the 100th term of the sequence in part (ii).

Answer.....

10. Put the following numbers into the correct positions in the diagram below:

5 6 7 8

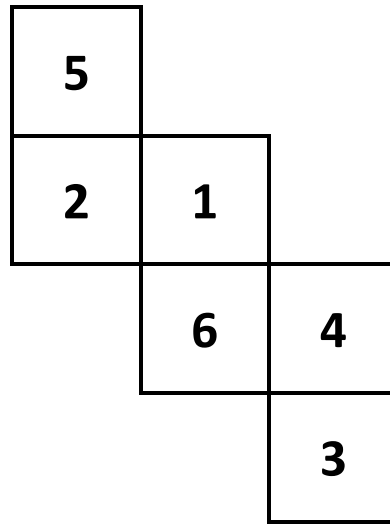


- 11.** Fill in the missing values in the table below to show the fraction, decimal and percentage equivalents of the numbers.

Give the fractions in their simplest form.

	Fraction	Decimal	%
A	$\frac{3}{10}$	0.3	30%
B	$\frac{1}{5}$		
C			24%
D		0.34	

12. Alice makes a die from the net below.



Which number will be opposite

(i) The number 1

Answer.....

(ii) The number 2

Answer.....

13. Mayur is making vegetable soup.

$\frac{1}{3}$ of the soup is made from carrots

$\frac{1}{2}$ is made from lentils

$\frac{1}{12}$ is made from parsnips



The rest is made from tomatoes.

If he makes 600g of soup in total,

(i) How much carrot does he need?

Answer..... g

(ii) How much tomato does he need?

Answer..... g

14. James counts down in 9's starting from 345 until he passes zero. Which will be the last positive number which he counts?

Answer.....

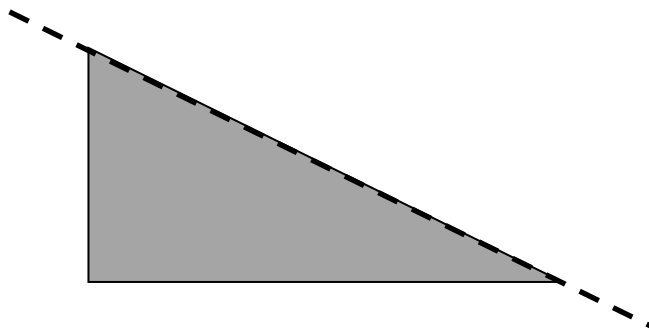
- 15.** A website advertises that, as a special offer, a new mobile phone game will cost 40% less to download next week.

If the game costs 80p this week, how much will it cost next week?



Answer.....

- 16.** The diagram shows part of a shape together with its line of symmetry. Draw in the remainder of the shape.

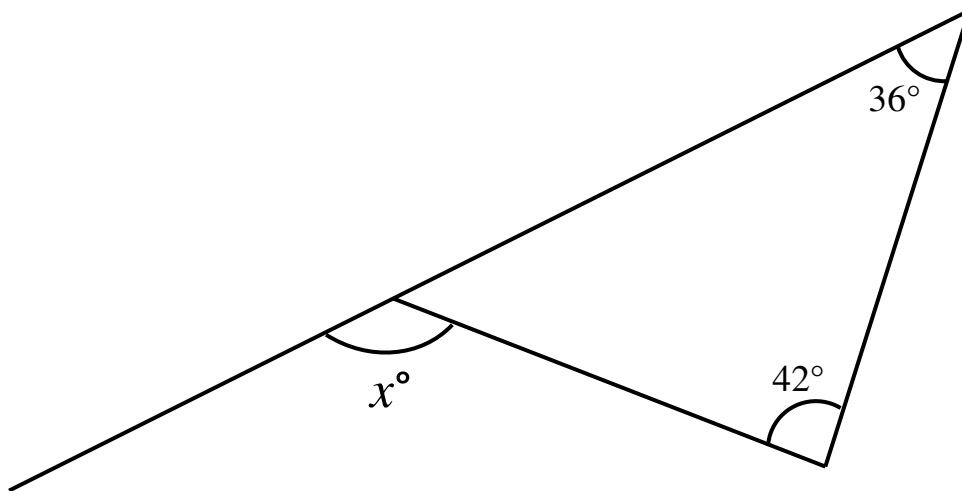


17. 3 x 's balance with 10 y 's.

If one x weighs 1.5g, how much does one y weigh?

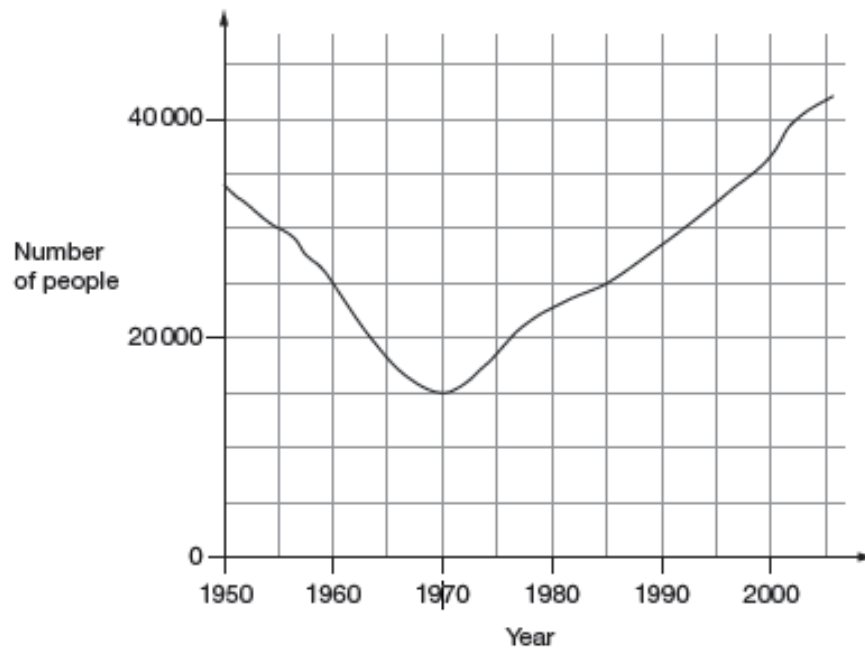
Answer.....

18. Work out the value of the angle labelled x in the diagram below. The diagram is **NOT** drawn to scale.



Answer..... $^\circ$

19.



The graph shows the number of people living in Puddletown from 1950 onwards.

- (i) How many people lived in Puddletown in 1955?

Answer.....

- (ii) In which other year was the number of people the same as in 1960?

Answer.....

- (iii) When did the population first fall below 30 000?

Answer.....

- (iv) On the graph, mark the point at which the population is growing fastest.

20. In a lucky dip there are 10 envelopes.

6 envelopes contain a note saying “Better luck next time!”

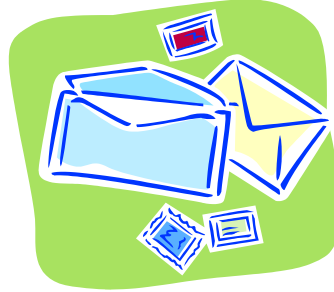
The other 4 envelopes contain prizes:

One contains £1

One contains £2

One contains £5

One contains £10



- (i) Nina pulls one envelope from the lucky dip.
What is the probability that she has won a prize?

Answer.....

- (ii) Find the mean average of £1, £2, £5 and £10.

Answer £.....

- 21.** Jack has thought of two numbers.
When he multiplies them together he gets 96.
When he takes one number away from the other, he gets 4.

What are the two numbers?

Answer.....

- 22.** A farmer wants to put a fence along one edge of his field, which is 480m long. Every 4m, a post is needed to hold the rails up.



How many posts does he need?

Answer.....

23.

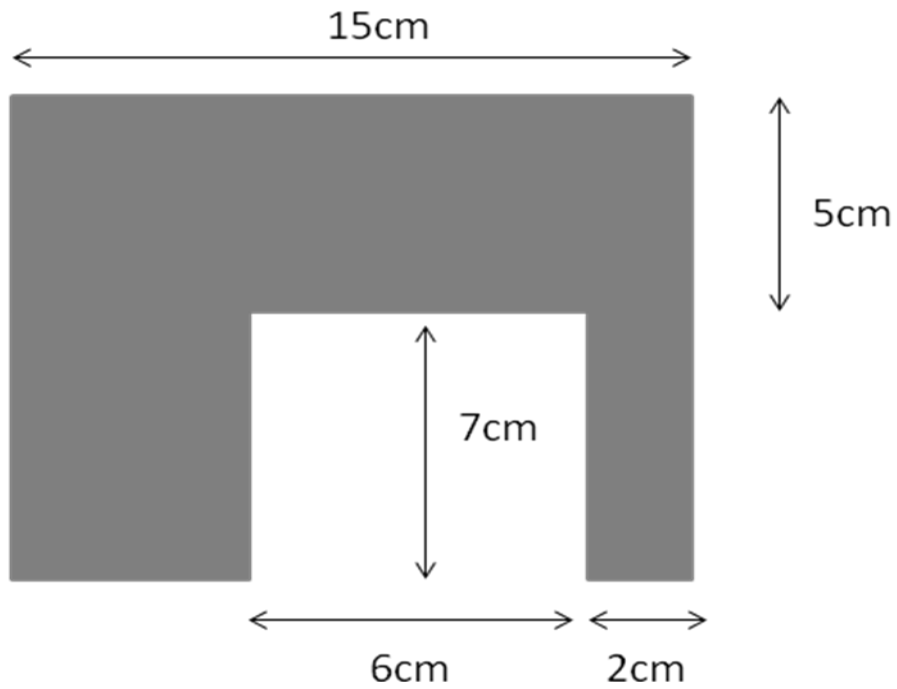


Diagram NOT to scale

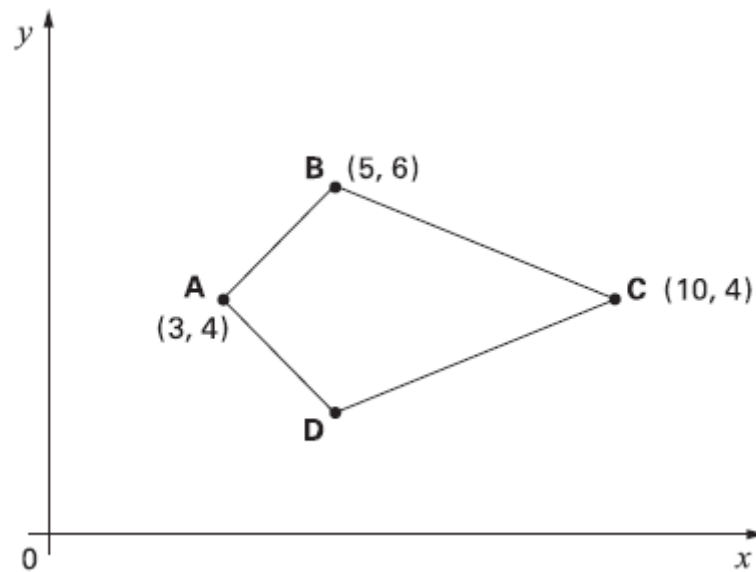
- (i) Find the perimeter of the shape above.

Answer..... cm

- (ii) Find its area.

Answer..... cm²

24.



ABCD is a kite.
Write down the coordinates of vertex D.

Answer.....

25. How many minutes are there from 11:11 until 23:23 on the same day?



Answer..... minutes

- 26.** In Matt's pocket there are 8 watermelon jellybeans, 4 vanilla jellybeans and 4 butter popcorn jellybeans. What is the smallest number of jellybeans that he must take out of his pocket to be certain that he takes at least one of each flavour?

Answer.....

END OF EXAMINATION

Paper Notes: 11+ Maths Specimen Paper (11+ Maths Specimen Paper)

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+ Entrance Examination** specimen paper in **Mathematics**, published by **The King's School, Chester**. It provides a representative sample of the questions candidates can expect when sitting the school's actual entrance exam for **Year 7 entry**. The paper is designed to assess numerical fluency, problem-solving skills, and mathematical reasoning without the aid of a calculator.

The format comprises **26 questions** of varying difficulty, covering arithmetic operations, fractions, percentages, geometry, sequences, data interpretation, and logic puzzles. Most questions require a single numerical answer or a brief written response, with space provided for working out. The paper emphasises **mental methods** and the ability to approach unfamiliar problems systematically.

This specimen paper is particularly useful for students targeting independent and grammar school entry in the UK. It offers a realistic practice environment and helps families understand the style and standard expected by selective schools. The **45-minute time limit** requires candidates to work briskly but accurately, balancing speed with careful checking.

How this paper is organised

The paper opens with clear instructions: answer as many questions as possible, show working, and move on if stuck. **Calculators are not permitted**, ensuring that all arithmetic must be performed mentally or on paper. The layout provides answer lines adjacent to each question, with white space between items for rough working.

Questions are numbered sequentially from **1 to 26**, with no formal section divisions. However, the difficulty and topic mix vary throughout. Early questions focus on **basic arithmetic** (addition, subtraction, multiplication, and division of decimals and whole numbers), while later items introduce **applied problem-solving**, such as calculating probabilities, interpreting graphs, and reasoning about geometry and sequences. Some questions contain multiple parts (for example, Question 1 has four sub-parts), increasing the effective number of tasks.

The **45-minute time allowance** translates to roughly two minutes per question on average, though candidates should aim to complete straightforward calculations quickly to leave time for the more demanding reasoning questions towards the end. The

paper does not specify explicit mark allocations, so students are advised to treat each question as equally weighted when planning their approach.

Topics covered

- Decimal arithmetic: addition and subtraction of decimals to three decimal places, and multiplication and division of decimals by whole numbers and decimals
- Ordering and comparing decimals: placing four-digit decimal numbers in ascending order by comparing place values systematically
- UK coins and combinatorics: identifying which amounts can be formed using exactly three coins from the set of UK denominations
- Division with remainders: dividing three-digit whole numbers by single-digit divisors and expressing the result as a quotient and remainder
- Operations and inverse relationships: completing arithmetic sentences by selecting the correct operation (+, -, ×, ÷) to balance equations
- Rounding: rounding decimals to the nearest whole number and rounding large whole numbers to the nearest thousand
- Geometry and spatial reasoning: recognising which shapes tessellate to form a square, completing symmetrical shapes given a line of symmetry, and calculating perimeter and area of composite rectilinear figures
- Fractions, decimals, and percentages: ordering fractions with different denominators, converting between fractions, decimals, and percentages, and simplifying fractions
- Sequences and patterns: identifying the rule in arithmetic and Fibonacci-style sequences, finding specific terms, and extrapolating to the 100th term of a linear sequence
- Data interpretation and graph reading: extracting information from a line graph showing population change over time and identifying points of maximum gradient
- Probability: calculating simple probabilities from a finite set of outcomes and expressing them as fractions
- Mean average: calculating the arithmetic mean of a small set of values
- Algebraic reasoning and simultaneous conditions: finding pairs of numbers that satisfy two given conditions (product and difference) through trial and systematic elimination
- Applied problem-solving: calculating fence posts required for a given length (avoiding the classic 'posts and gaps' error), determining the time elapsed between two clock times in 24-hour format, and solving worst-case combinatorial problems (drawing jellybeans to guarantee one of each flavour)
- Coordinates and properties of quadrilaterals: identifying the coordinates of a missing vertex in a kite given the positions of the other three vertices and symmetry constraints
- Percentage decrease: calculating the new price after a given percentage reduction

How to use this paper for revision

- Practise mental arithmetic daily, focusing on multiplying and dividing by single-digit numbers and by 10, 100, and decimals like 0.1 and 0.2, as calculators are forbidden.
- Review how to compare decimals by examining each place value in turn from left to right, rather than relying on gut feeling or the number of digits after the point.
- Work through fraction problems by converting to a common denominator. For instance, converting $\frac{1}{2}$, $\frac{3}{8}$, $\frac{1}{3}$, $\frac{5}{12}$, and $\frac{7}{24}$ all to twenty-fourths makes ordering straightforward.
- Familiarise yourself with the set of UK coins (1p, 2p, 5p, 10p, 20p, 50p, £1, £2) and practise making different totals with exactly three coins to spot patterns.
- When tackling word problems, underline or highlight the key numerical information and the question being asked before starting any calculation to avoid misreading.
- For sequences, write down the differences between consecutive terms to identify the rule, and check your answer by extending the sequence forwards and backwards.

Common mistakes to avoid

- Misaligning decimal points during addition and subtraction. Always write decimals in column form with points vertically aligned to avoid place-value errors.
- Forgetting the remainder in division questions. The question explicitly asks for both quotient and remainder, so stating only '77' for $623 \div 8$ loses marks.
- Confusing perimeter with area. Perimeter is the distance around the edge (add all side lengths), while area measures the space inside (multiply or decompose into rectangles).
- In percentage problems, calculating the percentage decrease but forgetting to subtract it from the original price. For example, 40% of 80p is 32p, so the new price is 48p, not 32p.
- Off-by-one errors in counting problems involving posts or intervals. A 480m fence with posts every 4m requires 121 posts ($480 \div 4 + 1$), not 120, because you need a post at both ends.
- Ordering fractions without finding a common denominator, leading to incorrect sequences. Always convert to equivalent fractions with the same denominator or use decimal equivalents.

Exam technique

Begin by reading the instructions carefully and noting the **45-minute time limit**. Scan the paper quickly to gauge the range of question types, then start at Question 1 and work sequentially. If a question seems particularly difficult or time-consuming, mark it lightly and move on rather than getting stuck, as the paper explicitly advises returning to unanswered questions if time permits.

Show all working in the spaces provided, even for questions that seem straightforward. Partial credit is rarely available on entrance papers, but clear working helps you check your logic and spot errors. Aim to spend no more than two minutes per question initially, leaving at least five minutes at the end to revisit flagged items and check arithmetic. For multi-part questions like Question 1, complete all parts before moving on to maintain momentum.

Pay close attention to units and labels in your answers. If a question asks for grams, write 'g'; if it asks for degrees, include the degree symbol. **Reading the question carefully** is the single most effective technique: many marks are lost not through inability to calculate but through answering the wrong question. Finally, if you finish early, use any remaining time to re-check arithmetic rather than leaving early, as small slips can accumulate quickly across 26 questions.

What to revise alongside this paper

Students preparing for this paper should ensure they are confident with **long multiplication and long division** without a calculator, as these underpin many of the arithmetic questions. Revisit how to manipulate fractions, particularly finding lowest common multiples to compare or add fractions with different denominators, and practise converting fluently between fractions, decimals, and percentages in both directions.

Geometry topics such as **properties of quadrilaterals** (parallelograms, kites, trapezia) and **angle facts** (angles in a triangle, angles on a straight line, exterior angles) frequently appear in 11+ papers. Work through problems involving coordinates, symmetry, and transformations to build spatial reasoning. Graph interpretation is another key skill: practise reading values from line graphs and bar charts, identifying trends, and calculating gradients informally by observing steepness.

For students aiming to excel, explore **ratio and proportion**, simple algebraic manipulation (forming and solving equations), and more advanced combinatorics and probability. These topics occasionally appear in the hardest questions on selective school papers and provide useful challenge for strong mathematicians. Completing past papers from other independent schools, such as those available from GL

Assessment or from other grammar school websites, will consolidate exam technique and build confidence under timed conditions.

Key terms

Decimal, Remainder, Perimeter, Area, Probability, Mean average, Sequence, Common denominator, Percentage, Coordinates, Symmetry, Kite (quadrilateral), Vertex, Rounding, Place value

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ENTRANCE EXAMINATION

MATHEMATICS

Sample Paper 2

Time allowed: 45 minutes

- There are 26 questions. Answer as many as you can.
- Write your answers in the spaces provided.
- Show any working in the spaces between the questions.
- If you cannot answer a question, go on to the next one. Return to it later if you have time.
- Check your work if you finish early
- Calculators may **not** be used.

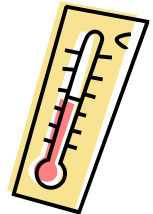
Do not open this paper until you are told to do so.

1. Circle all numbers that are bigger than 0.45

0.5 0.6 0.4 0.08 0.404

2. Over the Christmas holidays this year the maximum temperature at a teacher's house was 7.20 degrees Celsius.

The temperature has now **fallen** by 3.15 degrees, what is the temperature?



Answer.....

3. Calculate the following **showing your working out clearly**.

(a) $11.36 + 3.40$

Answer.....

(b) $3.54 - 2.34$

Answer.....

(c)
$$\begin{array}{r} 213 \\ \times 17 \\ \hline \end{array}$$

Answer.....

(d) 844×0.25

Answer.....

4. (a) Divide 911 by 6 giving your answer and the remainder.

Answer.....

Remainder.....

(b) Write one number that fits all three of these statements.

The number is a
multiple of 4

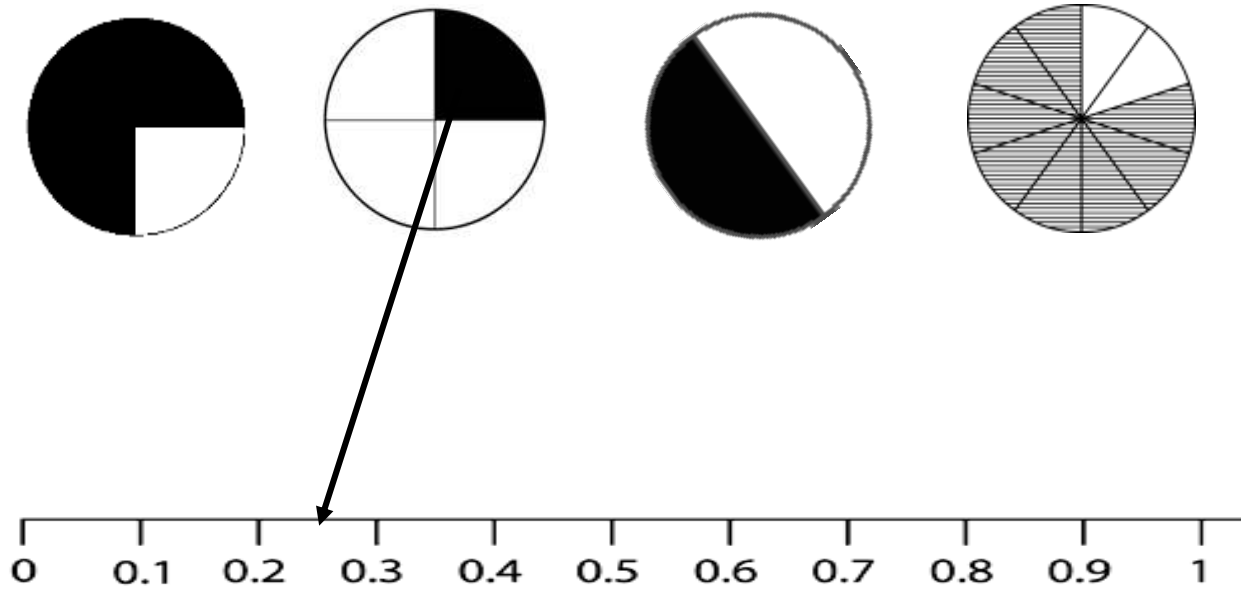
The number is a
multiple of 6

The number ends in 2

Answer.....

5. A fraction of each circle has been shaded.

Match the fraction to the correct place on the number line. One has been done for you.



6. (a) Round 4.2 to the nearest whole number.

Answer.....

(b) Round 37456 to the nearest hundred.

Answer.....

7. Here are four number cards

2

8

6

3

(a) Use all four number cards to make this sum correct.

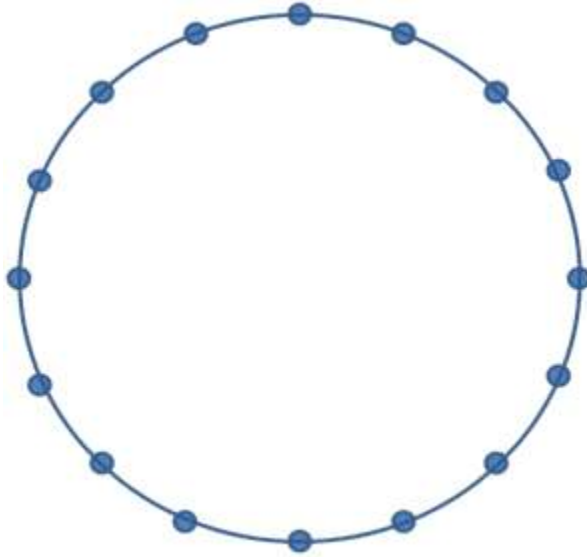
$$\square \square + \square \square = 100$$

(b) Write **any** numbers in the next boxes so that the calculation below is true..

$$7 \times \square = \square - 7$$

8. The 16 points on this circle are equally spaced. Join 4 points to make a square.

You may use a ruler.



9. Write these fractions in order of size from smallest to the largest.

$$\frac{5}{8} \quad \frac{2}{3} \quad \frac{1}{2} \quad \frac{7}{12} \quad \frac{17}{24}$$

Smallest **Largest**

10. (a) Write down the next two terms of this sequence of numbers.

2 8 14 20

Answer.....

(b) What is the 50th term of this sequence of numbers?

6 11 16 21 26

Answer.....

(c) Here is another number sequence.

90 99 108 117 126 135

Circle all the following numbers that would be in this number sequence.

200 2007 163 918 45

11. (a) At a supermarket 3 kilograms of apples costs £12.

How much does 18 kilograms of apples cost?

Answer.....

(b) At the same supermarket 10 kilograms of oranges costs £14.

How much does 4 kilograms of oranges cost?

Answer.....

(c) 3 fully open taps fill up a bath in 60 seconds.

How long will 2 fully open taps take to fill up the same bath?

Answer.....

12. Phil holds a bag containing 16 blue sweets and 4 red sweets.



(a) What **percentage** of sweets in this bag are red?

Answer.....%

Phil now eats 4 of the blue sweets.

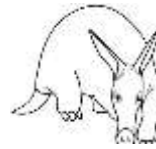
(b) What **fraction** of the sweets in the bag are now blue?

Answer.....

13. Four numbers A, B, C and D have been written out as a fraction, a decimal and a percentage.
Complete the table giving fractions in their simplest form.

	Fraction	Decimal	Percentage
A	$\frac{1}{5}$	0.2	20%
B	$\frac{4}{5}$		
C			83%
D		0.08	

14. One Aardvark weighs the same as 20 Squirrels.



One Tapir weighs the same as 4 Aardvarks.



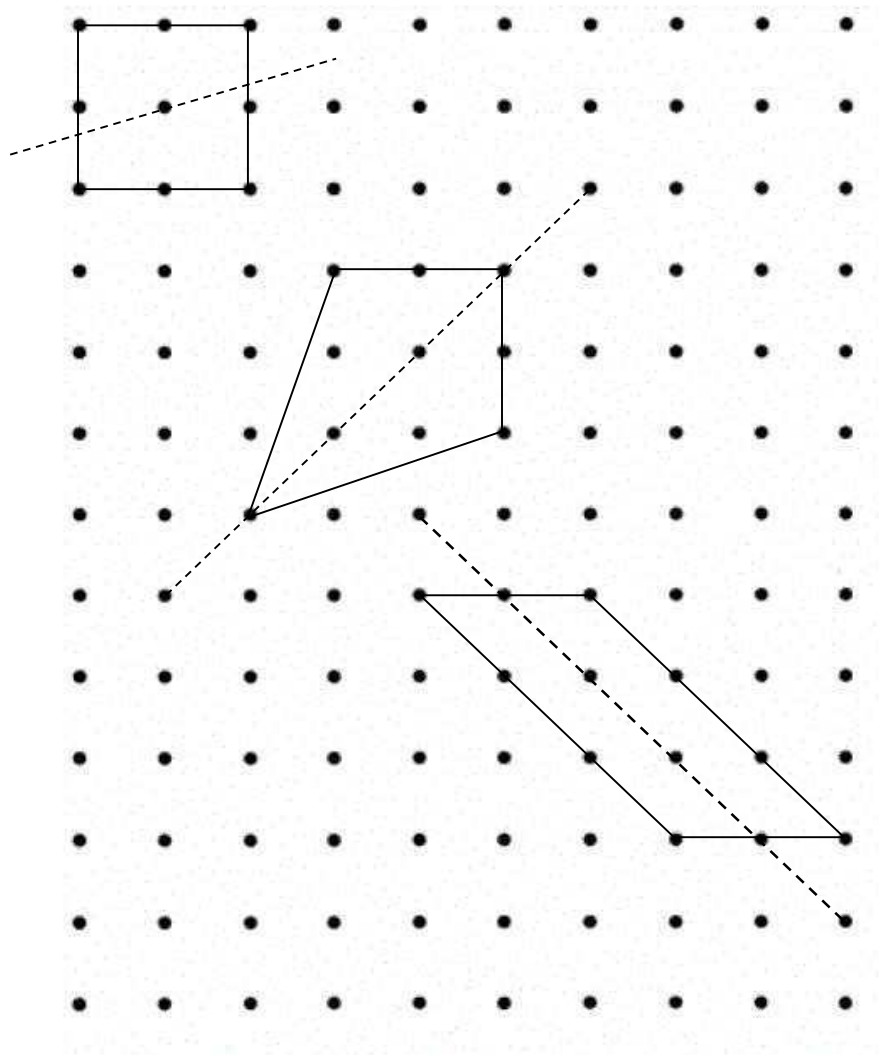
How many Squirrels weigh the same as 3 Tapirs?



Answer.....

15. Here are 3 four sided shapes drawn on a square grid.

Put a tick next to each shape if the line drawn on it is a line of symmetry.



16. Rose is making a lemon cake. Part of the recipe for the cake mix is below.

$\frac{1}{4}$ of the cake mix is sugar
 $\frac{1}{2}$ of the cake mix is flour
 $\frac{1}{12}$ of the cake mix is lemons



The rest of the cake mix is made from other ingredients.

If there are 900 grams of cake mix

(a) How many grams of sugar are there?

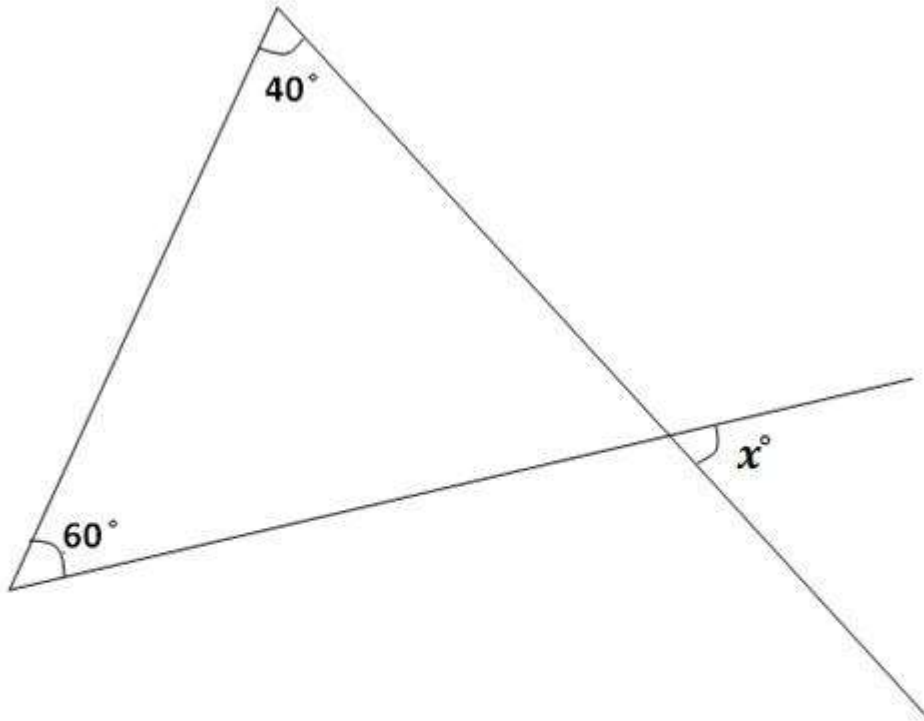
Answer.....g

(b) How many grams of ingredients other than lemons, flour and sugar are there?

Answer.....g

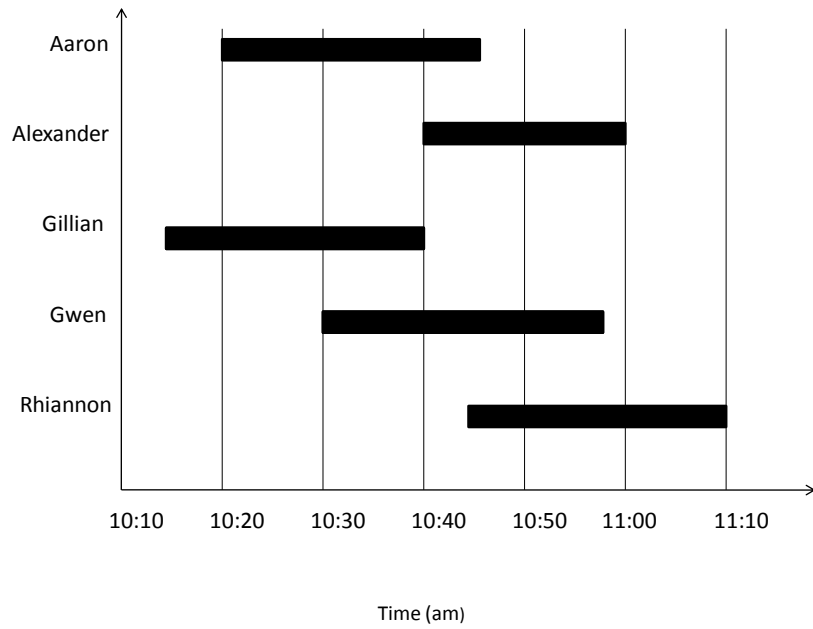
17. Work out the value of the angle labelled x in the diagram below.

The diagram is not drawn to scale.



Answer.....

18. This chart shows the times when 5 children were visiting Chester Zoo one afternoon.



(a) Who arrives the **earliest** out of the 5 children?

Answer.....

(b) Who spent the **shortest time** at the zoo?

Answer.....

19. A group of five Removes pupils were asked to give the film ‘Toy Story 3’ a mark out of 10.

The marks they gave were as follows

10 8 10 10 7



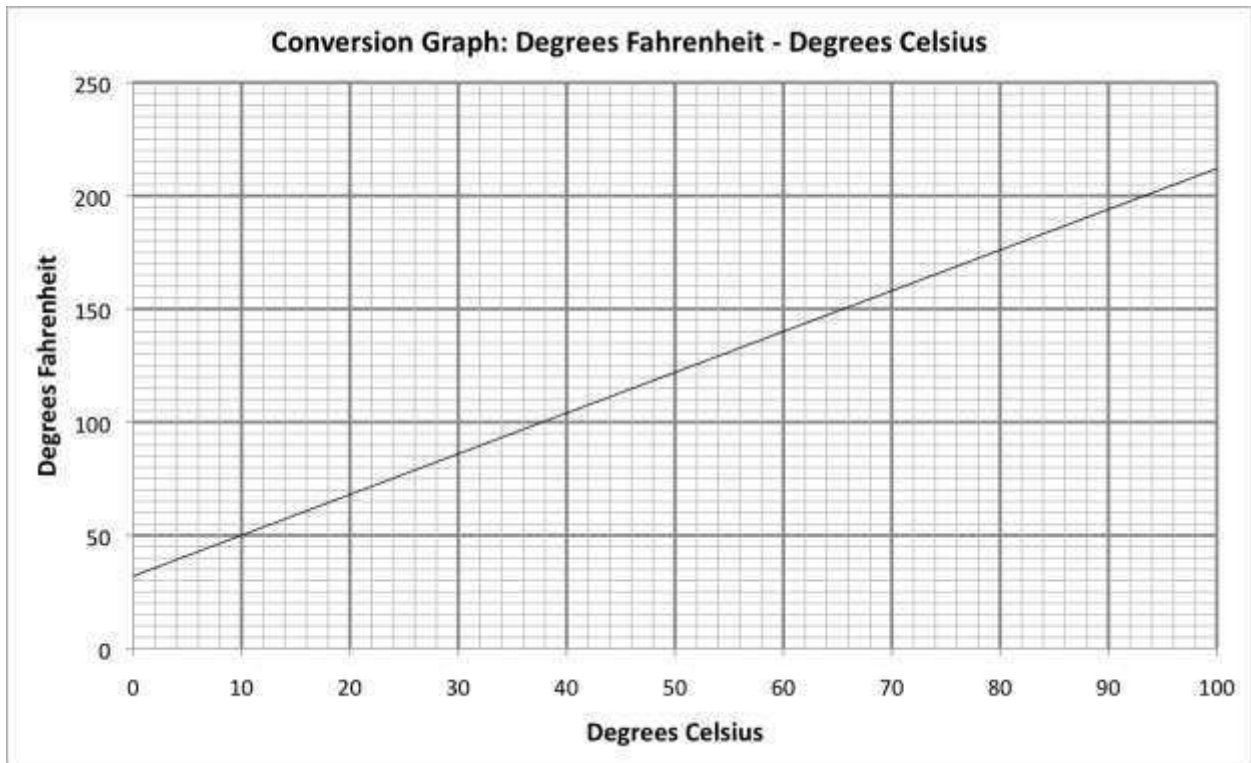
(a) If I pick one of the pupils at random. What is the probability that they have given the film a score of 10? Give your answer as a fraction.

Answer.....

(b) What is the mean average score out of 10 for this group?

Answer.....

20. The graph below converts degrees Celsius to degrees Fahrenheit.



Use the graph to complete the following sentences.

(a) 74 degrees **Celsius** is the same as degrees **Fahrenheit**.

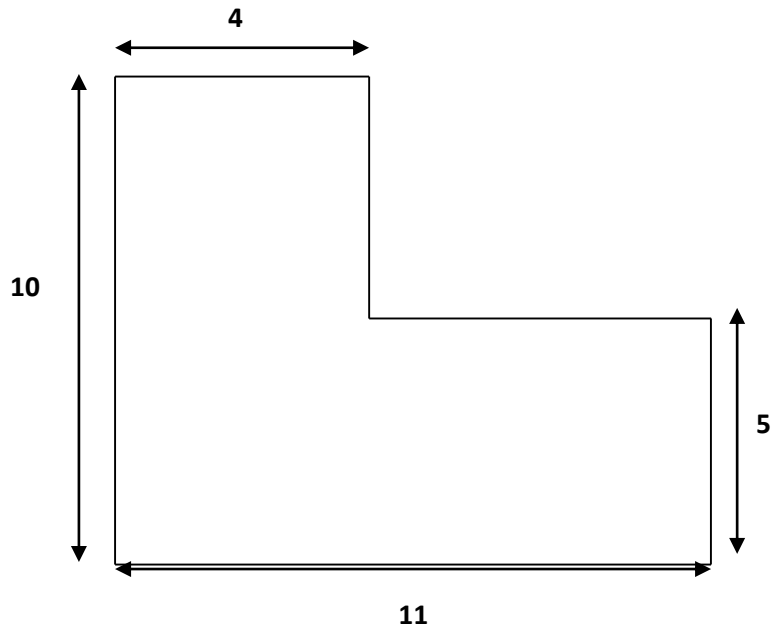
Answer.....

(b) 120 degrees **Fahrenheit** is the same as degrees **Celsius**.

Answer.....

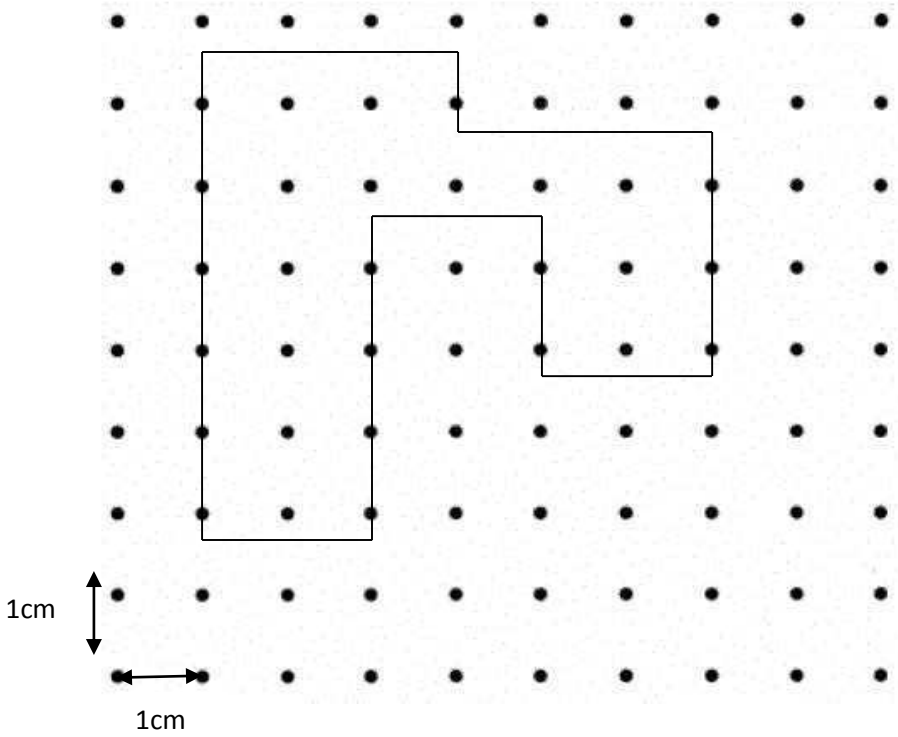
21. (a) Calculate the area of the following shape which is made from rectangles.

The shape is not drawn to scale.



Answer.....

- (b) Calculate the perimeter (the length around the **outside**) of the following shape.
Each small square is 1cm by 1cm.



Answer.....

22. At 'Canty's Candy Shop' the following prices are charged.

3 Mars bars and 1 Crunchie bar costs £1.90.
1 Mars bar and 1 Crunchie bar costs 90 pence.

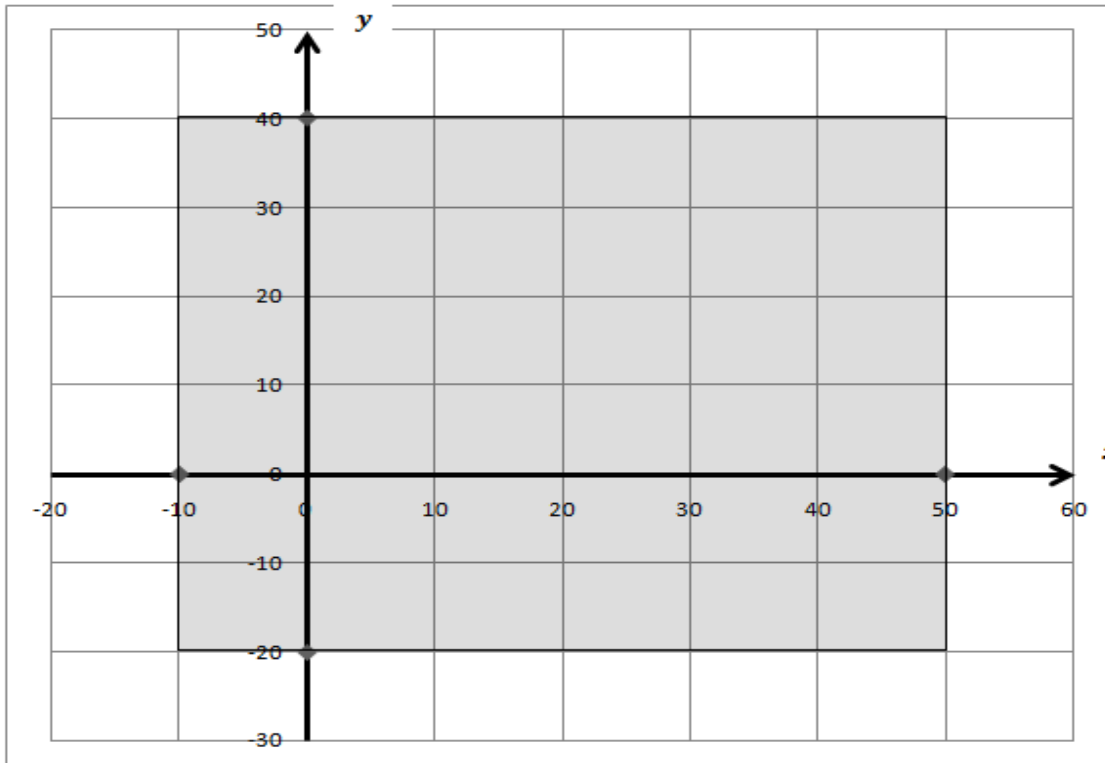
(a) How much will 2 Mars bars cost?

Answer.....

(b) How much will 3 Crunchie bars cost?

Answer.....

23. Here is a shaded rectangle on x and y axes.



For each of the co-ordinates (points on the graph) shown in the table below, put a tick to show if it is inside or outside the shaded square. One has been done for you.

		INSIDE	OUTSIDE
A	(20, 30)	✓	
B	(30, -10)		
C	(-20, -20)		
D	(45, 60)		
E	(-5, 35)		

24. A milk crate contains 4 rows and 6 columns. It is shown below. A milkman needs to deliver exactly 18 bottles.

Complete this grid and find a way to fit the bottles in so that every row and column has an **even** number of bottles; 0, 2, 4 and 6 are even numbers.

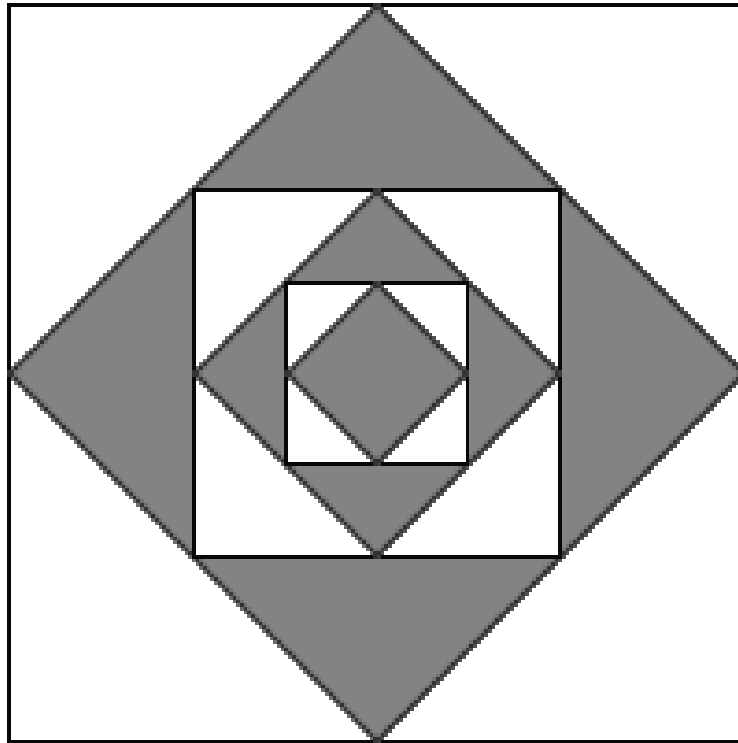
This example **won't** work as the third and fourth rows have 3 bottles in them.

There are 3 in this row →

O	O	O	O	O	O
O	O	O	O	O	O
O	O				O
O	O				O

Put your answer in the crate drawn below

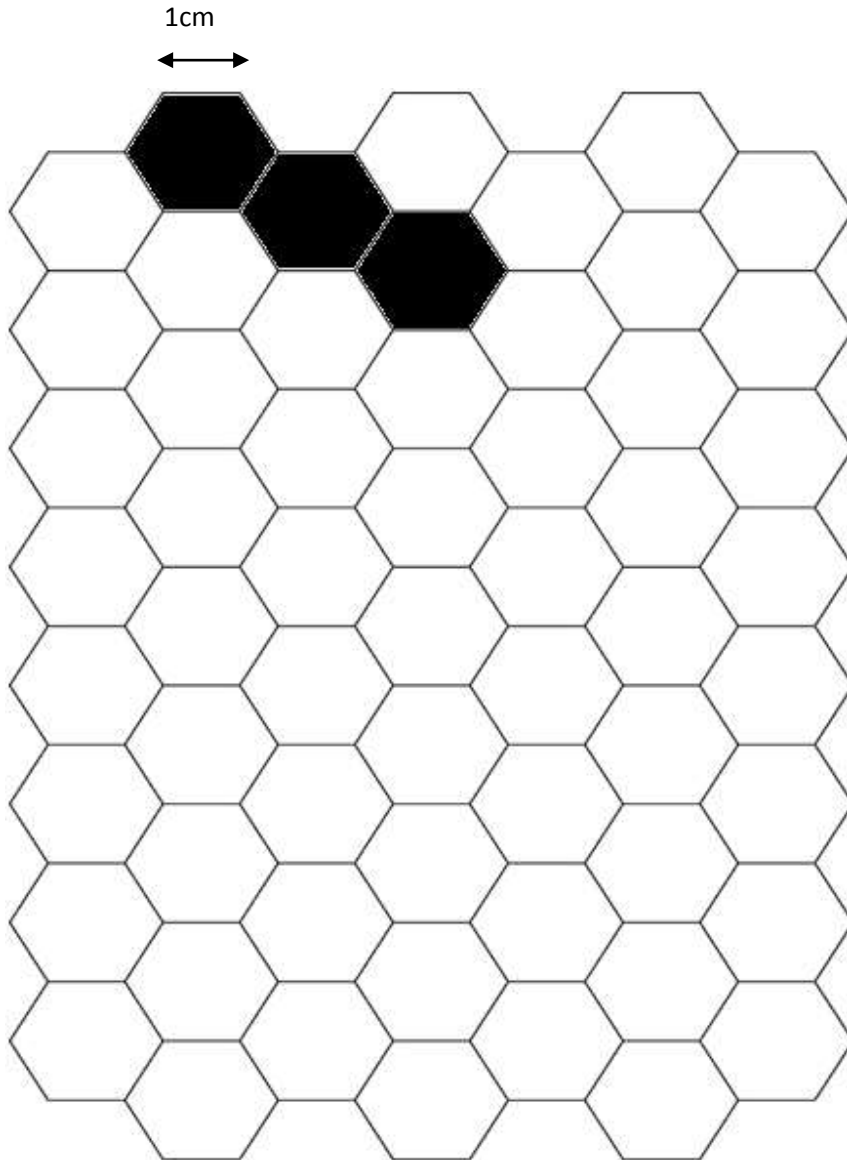
25. These are called nested squares. What fraction of this shape is shaded in?



Answer.....

26. The shaded shape has an area of 3 hexagons and a perimeter of 14cm.

Draw and shade in another shape which has an area of 4 hexagons and a perimeter of 14cm.



END OF EXAMINATION

Paper Notes: 11+ Maths Sample Paper (11+ Maths Sample Paper)

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

Overview

This is a **mathematics sample paper** published by **The King's School, Chester**, designed to prepare students for **11+ entrance examinations**. The paper contains **26 questions** to be completed in **45 minutes** without the use of calculators, testing a broad range of mathematical skills expected at the end of primary school.

The questions span arithmetic operations (including decimals and multiplication), fractions and percentages, sequences and patterns, geometry, area and perimeter, probability and data interpretation, and problem-solving. The format mixes straightforward calculations with multi-step reasoning tasks, matching the style and difficulty of typical independent school entrance assessments.

This paper is particularly valuable for students preparing for selective grammar or independent school entrance, offering a realistic preview of the pace, variety, and challenge they will face. The mixture of question styles rewards both accuracy in basic skills and confidence in tackling unfamiliar or complex problems.

How this paper is organised

The paper is organised as a single continuous sequence of **26 questions**, with no formal section breaks, to be completed in **45 minutes**. Early questions focus on decimal comparisons, basic arithmetic, and number properties, gradually building in complexity towards multi-step word problems, coordinate geometry, and spatial reasoning.

Each question carries implicit weighting through the space provided and the depth of reasoning required. Questions 1 to 6 are relatively quick checks of number sense and rounding; questions 7 to 14 introduce fractions, ratio, and algebra; questions 15 to 21 shift to geometry, symmetry, area, and perimeter; and questions 22 to 26 demand advanced problem-solving, including simultaneous equations and spatial pattern challenges.

Students are instructed to show working clearly and to move on if stuck, returning to difficult questions later. The paper expects confident mental arithmetic and methodical written working, with no multiple-choice shortcuts.

Topics covered

- Decimal comparison and ordering, including numbers with varying decimal places
- Addition and subtraction of decimals, with column method working
- Multiplication of whole numbers and decimals, including long multiplication and multiplying by 0.25
- Division with remainders, and identifying numbers satisfying multiple conditions (multiples and digit properties)
- Fractions on a number line, ordering fractions with different denominators, and simplifying fractions
- Rounding to the nearest whole number and nearest hundred
- Number sequences (linear patterns), finding n th terms, and identifying sequence members
- Ratio and proportion problems, including scaling quantities and inverse proportion (taps filling a bath)
- Percentages and fractions of quantities, converting between forms, and calculating with fractions
- Coordinates and graph interpretation, including identifying points inside or outside regions, and reading conversion graphs
- Angles in triangles and exterior angles, using angle properties to solve for unknowns
- Symmetry recognition in quadrilaterals drawn on grids
- Area of composite shapes made from rectangles, and perimeter of irregular shapes on grids
- Probability as a fraction, and calculating the mean average
- Problem-solving with simultaneous conditions (e.g. pricing problems with two unknowns, arranging bottles in a grid to satisfy even-number constraints)
- Spatial reasoning with nested shapes and hexagon tessellations, finding areas and perimeters under constraints

How to use this paper for revision

- Practise multiplying and dividing decimals without a calculator, especially by 0.25, 0.5, and other common fractional equivalents, until the methods become automatic.
- Revise how to compare and order fractions by finding a common denominator, and memorise fraction-decimal-percentage equivalents (e.g. $\frac{1}{4} = 0.25 = 25\%$).
- Work through a variety of number sequence problems, focusing on spotting the common difference and writing the n th term formula for linear sequences.
- Strengthen your understanding of ratio and proportion by solving word problems involving scaling quantities up and down, and recognise inverse proportion scenarios.
- Draw clear diagrams for geometry questions, labelling all known angles and sides, and practise using angle facts (angles in a triangle sum to 180° , exterior angles equal the sum of opposite interior angles).
- Revise area and perimeter of rectangles and composite shapes, and practise counting perimeters carefully on grids, including internal edges.
- Familiarise yourself with reading and interpreting conversion graphs and bar charts, practising reading values accurately from axes.

Common mistakes to avoid

- Forgetting to align decimal points when adding or subtracting decimals, leading to place-value errors (e.g. treating $11.36 + 3.40$ as $1136 + 340$).
- Confusing area and perimeter, especially in composite shapes, and forgetting to include all edges when calculating perimeter.
- Miscounting or misidentifying multiples when a number must satisfy several conditions simultaneously (e.g. a multiple of both 4 and 6 must be a multiple of 12).
- Incorrectly ordering fractions by comparing only numerators or denominators, rather than converting to a common denominator or decimal form.
- Making careless errors in long multiplication or division, especially when working under time pressure, by skipping steps or misaligning columns.
- Misinterpreting ratio problems as simple multiplication, rather than recognising the need to find a unit rate or scale factor first.

Exam technique

Allocate roughly **1.5 to 2 minutes per question** on average, but spend less time on straightforward calculations (questions 1 to 6) to leave more time for multi-step

problems (questions 22 to 26). Read every question twice before starting, underlining key numbers and what you are asked to find.

Show all working clearly, even for questions where you feel confident, because partial credit may be available if your method is sound but your final answer contains a slip. If you become stuck on a question, move on immediately and return to it at the end; spending five minutes on one difficult problem can cost you several easier marks elsewhere.

Use any spare time at the end to check your arithmetic carefully, especially in questions involving decimals, fractions, or multiple steps. Look for common-sense checks (e.g. does your area answer have sensible units? Is your probability between 0 and 1?) to catch mistakes before time runs out.

What to revise alongside this paper

Strengthen your understanding of **equivalent fractions, decimals, and percentages**, as fluency in converting between these forms underpins many questions on this paper. Revisit the rules for **order of operations (BIDMAS)** and ensure you are confident with both written methods and mental strategies for the four operations.

Explore more advanced topics such as **algebraic expressions and simple equations**, which appear implicitly in problems requiring unknowns to be found, and practise **coordinate geometry** beyond simple plotting, including reflections and translations. Deepen your spatial reasoning by tackling puzzles involving tessellations, symmetry, and transformations.

For students aiming at the most selective schools, extend into **prime factorisation, lowest common multiples, highest common factors**, and basic angle properties in polygons, as these topics occasionally appear in 11+ papers and provide a solid foundation for Key Stage 3 mathematics.

Key terms

Decimal, Fraction, Percentage, Ratio, Proportion, Sequence, Term, Multiple, Factor, Remainder, Coordinates, Perimeter, Area, Symmetry, Probability, Mean average, Exterior angle, Common denominator, Simplify

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