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PRACTICE PAPERS · QUESTION BOOKLETS · MARK SCHEMES & ANSWERS · PAPER NOTES

11+ PRACTICE PACK

CSSE 11+ Maths 2022

Complete Practice Pack

CONTENTS

CSSE

The Consortium of Selective Schools in Essex

MATHEMATICS PAPER FOR 2022 ENTRY – TEST 2

First Name: .....

Last Name: .....

Candidate Number: .....

Primary School: .....

Boy or Girl: .....

Date of Birth: .....

Today's Date: .....

Test Taken At: .....

READ THE FOLLOWING CAREFULLY:

1. **Do not open this booklet until you are told to do so.**
2. You may work the questions out in your head, or by writing on the white area around the question.
3. **Work as quickly and as carefully as you can.**
4. Make any alterations to your answers **clearly.** You will not lose marks for crossing out.
5. You will have **60 minutes** to do the test. If you find you cannot do a question, **do not waste time on it but go on to the next one.**
6. **Once the test has begun, you should not ask about questions in the test.**
7. **The use of electronic calculators of any description (including calculator watches) is NOT permitted.**

NOT TO BE FILLED IN BY PUPIL

PAGE	SCORE	
	R	W
1 (7)		
2 (5)		
3 (6)		
4 (6)		
5 (6)		
6 (5)		
7 (6)		
8 (5)		
9 (5)		
10 (4)		
11 (3)		
12 (2)		
TOTAL (60)		
INITIALS OF MARKER(S)		

You have sixty minutes to complete this paper.
Do your working out in the spaces on the paper.

Question (and working space)	ANSWER	Please do not write in this space
1 (a) Calculate $4348 + 74 =$		
(b) Calculate $4263 - 45 =$		
(c) Calculate $348 \div 6 =$		
2 (a) Calculate $\frac{3}{4} + \frac{3}{5} =$		
(b) Calculate $\frac{6}{7} - \frac{1}{6} =$		
(c) Calculate $2\frac{2}{3} \div \frac{1}{3} =$		
(d) Calculate $(12 \times 5) \div (24 \div 3) =$		R W (7)

GO TO NEXT PAGE

Question (and working space)	ANSWER	Please do not write in this space
3 (a) Calculate $\frac{1}{2} + \frac{1}{8} + \frac{1}{16} =$		
(b) Find the average (mean) of $\frac{3}{4}$ and $\frac{4}{5}$		
4 (a) How many millimetres are there in 3·12m?	.....mm	
(b) A rectangular area of length X metres and width Y metres is paved with square slabs, each of area $1m^2$. If exactly 500 slabs are used find values of X and Y which would make the area closest to being a square.	X =..... metres Y =..... metres	R W (5)

Question (and working space)	ANSWER	Please do not write in this space
5 In a certain game there are 7 points for a goal from open play and 3 points for a penalty. It is therefore impossible to score 1, 2, 4, 5 or 8 points.		
(a) What is the next lowest score that is impossible?		
(b) What is the lowest score that can be achieved in two different ways?		
(c) A score of 42 can be achieved through 6 goals or alternatively through 14 penalties. Find another different way of scoring 42 which involves goals and penalties.	..... Goals ..... Penalties	
6 B = 2A and 2C = A If A + B + C = 7 find:		
(i) A		
(ii) C		R W (6)

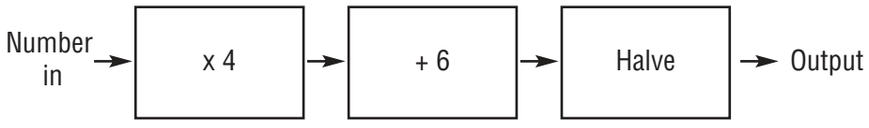
Question (and working space) | ANSWER | Please do not write in this space

7 Mana is completing a table of values for the formula **6n-2**.
Complete the table with the two missing values.

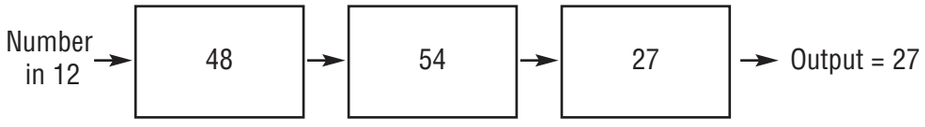
n	*6n–2*
1	4
2	10
8	
	88

(ii) Arun uses the formula $\mathbf{n^2 + 3}$.
Give the value from Arun's formula when **n** = 11.

8 A formula machine works as follows:



So, for example, if you input 12:



(a) Find the output if 36 is the number put in.

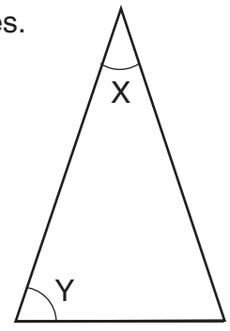
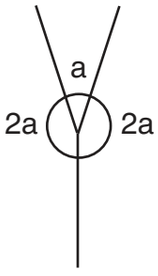
(b) Find the number put in if 163 is the output.

(c) Find a negative input so that the output equals the input.

R
W
(6)

GO TO NEXT PAGE

Question (and working space)	ANSWER	Please do not write in this space
9 X and Y are whole numbers. X rounded to the nearest 10 gives 350. Y rounded to the nearest 10 gives 320.		
(a) What is the largest possible value of X?		
(b) What is the smallest possible value of Y?		
(c) What is the largest possible value of X+Y?		
(d) What is the smallest possible value of X–Y?		
10 It takes 600cm^3 of petrol for a car to travel 8km.		
(a) How far can the car travel on 2100cm^3 of petrol?	.....km	
(b) How much petrol in litres is needed to travel 100km? (1 litre = 1000cm^3)	.....litres	R W (6)

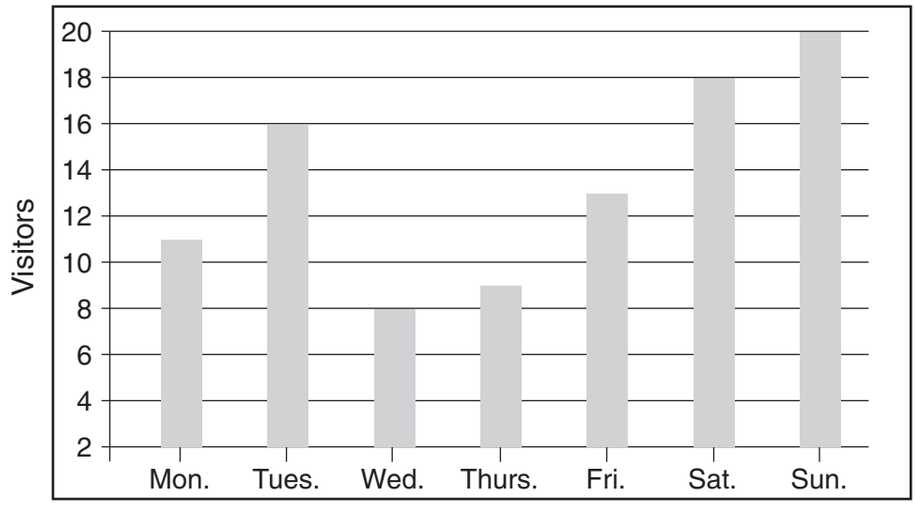
Question (and working space)	ANSWER	Please do not write in this space
11 Jenna plays a computer game. After 7 attempts her average (mean) score is 13.		
(a) What is the total of all her scores from the 7 attempts?		
(b) On her 8th attempt she achieves a record score of 21. What is her new average score?		
12 The triangle below is isosceles. 		
(a) If X = 30° find Y.	Y = ... degrees	
(b) If Y = 81° find X.	X = ... degrees	
(c) Three lines below meet at a point. Find the value of **a**. 	**a** = ... degrees	R W (5)

GO TO NEXT PAGE

Question (and working space)	ANSWER	Please do not write in this space
13 State whether the following are **true** or **false**.		
(a) All prime numbers are odd.	..... *True or False*	
(b) Some square numbers are even.	..... *True or False*	
(c) Some square numbers are prime.	..... *True or False*	
(d) The average of two odd numbers is always even.	..... *True or False*	
14 Mr Brown buys a coat. The original price of the coat is £64. In the sale it has 15% off. Mr Brown also has a loyalty card which entitles him to 10% off so he expects to get 25% off.		
(a) What did Mr Brown expect to pay?	£.....	
(b) In fact the shop gives him 10% off the sale price, not the original price. What did Mr Brown actually pay?	£.....	R W (6)

Question (and working space)	ANSWER	Please do not write in this space

15 The number of visitors to a local museum on seven consecutive days was as follows.



(a) How many visitors in total were there on the first 5 days (Monday to Friday)?

(b) What was the average (mean) number of visitors on Wednesday, Thursday and Friday?

(c) Tickets cost £2 from Monday to Friday, but £2.50 on Saturday or Sunday. Find the total money from ticket sales in the seven days.

£.....

16 (a) Find 30% of £240.

£.....

(b) $17\frac{1}{2}\%$ of X is 70. Find X.

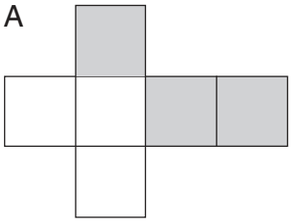
R
W

(5)

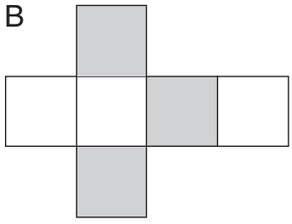
Question (and working space)	ANSWER	Please do not write in this space

17 Theo draws 5 nets for a cube and shades 3 of the sides in different ways as shown. He then cuts out the nets and assembles the cubes. For which one A, B, C, D or E is the shading on the final cube different to all the others?

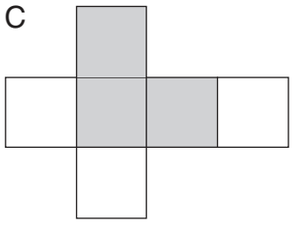
A



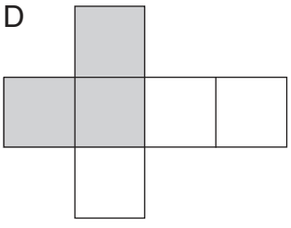
B



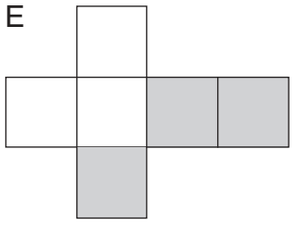
C



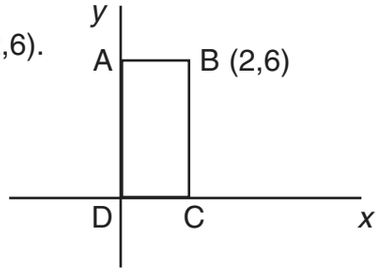
D



E



18 A rectangle ABCD is drawn on axes with D at the origin (0,0) and B at (2,6).



(a) The rectangle is rotated **clockwise** by 90° about the corner C. What will the new co-ordinates of B be?

(.....,.....)

(b) The rectangle is rotated a **further** 90° **clockwise** about C. What will the co-ordinates of B be now?

(.....,.....)

R
W
(5)

Question (and working space)	ANSWER	Please do not write in this space

19 The timetable below gives times of the morning and afternoon trains from Borchester to Dryden with the stops at Ister and Eccleford.

	Morning	Afternoon
Borchester	08:40	15:22
Ister	09:33	16:12
Eccleford	10:25	17:01
Dryden	11:14	17:50

(a) How long does the morning train take to get from Borchester to Dryden in hours and minutes?

..... hours and

..... minutes

(b) What is the difference between the time that the morning train takes to get from Ister to Eccleford and the time that the afternoon train takes to do the same stage?

..... minutes

(c) How long could someone spend in Ister if they took the morning train to Ister and then the afternoon train from Ister to Dryden?

..... hours and

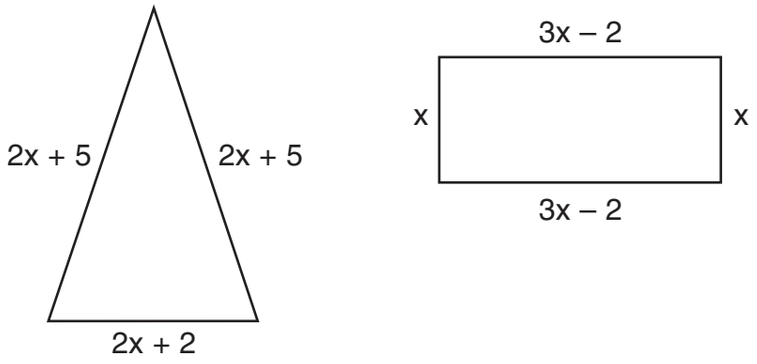
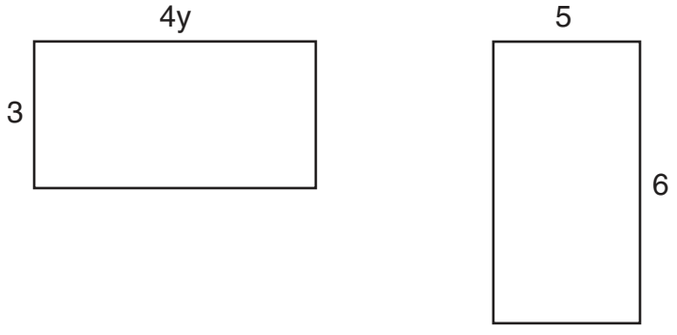
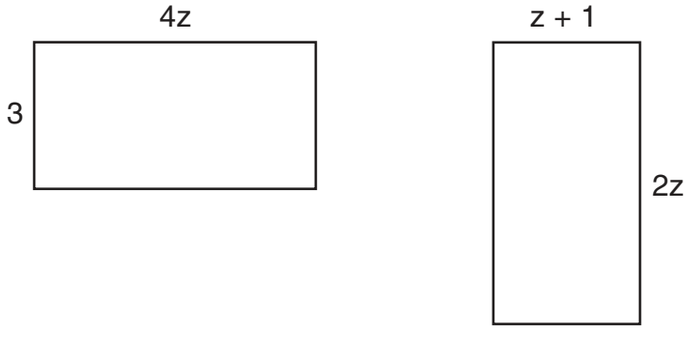
..... minutes

(d) There is a plan to electrify the track from Borchester to Ister. This would cut the journey time by 20%. How long should the afternoon train then take to get from Borchester to Ister?

..... minutes

R W

(4)

Question (and working space)	ANSWER	Please do not write in this space
20 (a) These two shapes have the same perimeter – find x. 	x = ...	
(b) These two rectangles have the same area – find y. 	y = ...	
(c) These two rectangles have the same area – find z. 	z = ...	R W (3)

GO TO NEXT PAGE

Question (and working space)	ANSWER	Please do not write in this space
21 (a) Jack thinks of a number. When he multiplies it by 17 he gets 153. What was the original number?		
(b) Pippa thinks of a positive number. She notices that when she multiplies her number by 6 she gets the same answer as when she squares her number. What was the original number?		

END OF TEST **(You should have completed 21 questions.)**

R W (2)

CSSE

The Consortium of Selective Schools in Essex

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Paper Notes: 11+ Maths Question Booklet

Compiled by SATs-Papers.co.uk to help you get the most from this paper.

Overview

This is a **CSSE 11-Plus Maths Question Booklet** for **2022 entry**, designed to assess the mathematical reasoning and problem-solving skills of Year 6 pupils applying to selective grammar schools in Essex. The paper consists of **21 questions** across a range of topics, from straightforward arithmetic to multi-step problem-solving, and candidates are given **60 minutes** to complete it without the use of a calculator.

The questions are presented in a free-response format, with working space provided alongside each item. Marks range from **2 to 7 per question**, totalling **60 marks** overall. The paper tests not only computational fluency but also the ability to interpret word problems, reason algebraically, and apply concepts to real-world contexts such as timetables, percentages, and measurement conversions.

This paper is suitable for pupils preparing for **grammar school entrance exams** at 11-Plus level. It offers a realistic exam experience and covers a broad curriculum, making it an effective revision tool for families seeking to familiarise themselves with the structure, pacing, and expectations of selective-school mathematics assessments.

How this paper is organised

The paper is divided into **21 numbered questions** distributed across **12 pages**, with a total mark allocation of **60**. Individual questions carry between 2 and 7 marks, with page totals clearly indicated in the margin (for example, page 1 is worth 7 marks, page 2 is worth 5, and so on). Candidates write their answers directly in the spaces provided on the right-hand side of each page, alongside the question text and working area.

The opening questions focus on basic operations (addition, subtraction, division, fractions), while later questions introduce algebra, geometry, reasoning about scores and patterns, and interpretation of charts and timetables. Each question is self-contained, but topics recur and build in complexity as the paper progresses.

Candidates are instructed to work quickly and carefully, to move on if stuck, and to show their working in the white space around each question. The front cover reminds pupils that calculators are **not permitted** and that they should not ask about questions once the test has begun. This structure encourages independent time management and rewards clear, methodical reasoning.

Topics covered

- Number operations: addition and subtraction of four-digit numbers, division of three-digit numbers, and order-of-operations problems involving brackets
- Fractions: addition and subtraction of fractions with different denominators, division of mixed numbers by unit fractions, and finding averages of fractional values
- Algebra: solving linear equations in context, forming expressions for perimeters and areas, and using substitution to find unknown values (e.g. B = 2A, 2C = A)
- Geometry and angle properties: isosceles triangles, angles at a point, and coordinate transformations (clockwise rotations about a fixed point)
- Problem-solving with constraints: identifying impossible and achievable scores under given rules (7 points for a goal, 3 for a penalty), and rectangle dimensions that best approximate a square
- Rounding and estimation: finding largest and smallest values consistent with rounding to the nearest 10, and calculating ranges for sums and differences
- Measurement conversions: millimetres to metres, cubic centimetres to litres, and applying unit rates (petrol consumption per kilometre)
- Percentages and proportional reasoning: calculating percentage discounts (including successive discounts), finding a whole from a percentage part (e.g. 17½% of X is 70)
- Interpreting data from tables and bar charts: reading a museum visitor chart, calculating totals and means, and determining ticket revenue from mixed pricing
- Timetable and time calculations: finding journey durations, time differences between services, layover times, and the effect of a 20% speed improvement on a leg of a journey
- Spatial reasoning: identifying cube nets that produce different shading patterns when assembled, and visualising transformations of rectangles on a coordinate grid
- Algebraic reasoning with equality: solving for unknowns in perimeter and area equations, and finding negative inputs to a multi-step function machine

How to use this paper for revision

- Practise mental arithmetic daily, focusing on four-digit addition and subtraction, times tables up to 12×12, and division with remainders, since calculators are not allowed.
- For fraction questions, always find a common denominator before adding or subtracting, and convert mixed numbers to improper fractions when dividing.
- When tackling word problems, underline key numbers and relationships, then translate the text into equations or diagrams to clarify what you need to find.
- In geometry questions, sketch and label diagrams carefully, marking equal sides in isosceles triangles and using angle facts (angles on a straight line sum to 180°, angles at a point sum to 360°).
- For rounding problems, write down the range of values that round to the given number (e.g. 350 comes from 345 to 354), then identify the extremes.
- Check your working as you go: if a question asks for a negative input, test your answer by substituting it back into the formula to confirm it works.
- When interpreting charts or timetables, read axis labels and column headings carefully, and use a ruler or finger to track values across rows and columns.

Common mistakes to avoid

- Misapplying order of operations: students often calculate (12 × 5) ÷ (24 ÷ 3) as (12 × 5) ÷ 24 ÷ 3, forgetting that the denominator must be evaluated first.
- Adding numerators and denominators separately when the denominators differ, for example treating 3/4 + 3/5 as 6/9 instead of finding a common denominator of 20.
- Confusing successive percentage discounts with a single discount: taking 10% off after 15% off does not yield 25% off the original price.
- Assuming all prime numbers are odd and overlooking that 2 is prime and even, leading to an incorrect 'true' answer for question 13(a).
- Rounding errors in multi-step problems: forgetting to round only at the final stage, or misreading 'largest possible value' as 'smallest possible value'.
- Rushing through geometry transformations and failing to track coordinates carefully after two successive 90° rotations, resulting in sign errors or swapped x and y values.

Exam technique

Begin by scanning the entire paper to gauge the range of question types and identify any that look immediately straightforward. Tackle these confidence-boosting questions first, securing easy marks and building momentum. Allocate roughly **2 to 3 minutes per mark**, so a 7-mark question should take around 15 minutes, while a 2-mark question might take 5 minutes.

Always show your working, even for questions that seem simple, because partial credit may be awarded for correct method even if the final answer is wrong. If you become stuck on a multi-part question, move on and return to it later rather than letting it consume time that could be spent on easier items elsewhere. Use the white space around each question to sketch diagrams, write out intermediate steps, and check your logic.

In the final five minutes, prioritise checking calculations rather than starting new questions. Look for common errors such as misread numbers, incorrect unit conversions, and arithmetic slips. If a question asks for units (metres, litres, degrees), ensure you have written them in the answer space. For algebra and geometry, verify that your answer makes sense in context (for example, a negative length or an angle greater than 180° in a triangle should prompt a review).

What to revise alongside this paper

Before attempting this paper, ensure you are confident with **times tables up to 12×12**, the four operations with whole numbers, and the basics of fractions (equivalent fractions, adding, subtracting, multiplying, and dividing). If you struggled with the algebra questions, revisit forming and solving simple equations, substituting values into expressions, and balancing equations. These skills underpin much of Key Stage 3 mathematics.

To extend your preparation, practise interpreting more complex data presentations such as pie charts, line graphs, and two-way tables, and work on problems involving ratio, proportion, and speed-distance-time. Geometry topics worth revising include properties of quadrilaterals, circle theorems at an introductory level, and transformations (translations, reflections, rotations). Tackling past papers from other consortia or publishers (Bond, GL Assessment, CEM) will expose you to different question styles while reinforcing the same core concepts.

Finally, develop your problem-solving stamina by working through non-routine puzzles and multi-step problems. Resources such as UKMT Junior Maths Challenge past papers or NRICH activities will help you learn to break down unfamiliar questions, test hypotheses, and reason logically under time pressure.

Key terms

> **Common denominator**, **Improper fraction**, **Mixed number**, **Order of operations (BIDMAS / BODMAS)**, **Isosceles triangle**, **Angle at a point**, **Coordinate transformation**, **Successive percentage discount**, **Mean (average)**, **Unit rate**, **Rounding to the nearest 10**, **Linear equation**, **Perimeter and area**, **Net of a cube**, **Time interval**

MATHEMATICS MAIN PAPER FOR 2022 ENTRY TEST 2 – ANSWERS

1 mark for each correct answer. Total 60 marks.

	ANSWER
1a	**4422**
1b	**4218**
1c	**58**
2a	$\frac{27}{20}$ or $1\frac{7}{20}$ or 1·35 or equivalent
2b	$\frac{29}{42}$ or equivalent
2c	**8**
2d	$7\frac{1}{2}$ or equivalent

	ANSWER
3a	$\frac{11}{16}$ or equivalent
3b	$\frac{31}{40}$ or equivalent
4a	**3120** ……mm
4b	X =**25**…… metres Y =**20**…… metres or X = 20 Y = 25

	ANSWER
5a	**11**
5b	**21**
5c	**3** …… Goals **7** …… Penalties
6i	**2**
6ii	**1**

	ANSWER
7i	<table><tr><th>*n*</th><th>*6n–2*</th></tr><tr><td>1</td><td>4</td></tr><tr><td>2</td><td>10</td></tr><tr><td>8</td><td>**46**</td></tr><tr><td>**15**</td><td>88</td></tr></table>
7ii	**124**
8a	**75**
8b	**80**
8c	**-3**

	ANSWER
9a	**354**
9b	**315**
9c	**678**
9d	**21**
10a	**28** ……km
10b	**7½** ……litres or 7·5

	ANSWER
11a	**91**
11b	**14**
12a	Y = **75** …… degrees
12b	X = **18** …… degrees
12c	**a** = **72** …… degrees

	ANSWER
13a	**False** ..... *True or False*
13b	**True** ..... *True or False*
13c	**False** ..... *True or False*
13d	**False** ..... *True or False*
14a	£ **48** .....
14b	£ **48·96** .....

	ANSWER
15a	**57**
15b	**10**
15c	£ **209** .....
16a	£ **72** .....
16b	**400**

	ANSWER
17	**B**
18a	(**8** , **0**)
18b	(**2** , **-6**)

	ANSWER
19a	**2** ..... hours and **34** ..... minutes
19b	**3** ..... minutes
19c	**6** ..... hours and **39** ..... minutes
19d	**40** ..... minutes

	ANSWER
20a	X = **8** .....
20b	Y = **2½** .....
20c	Z = **5** ..... also allow z = 0

	ANSWER
21a	**9**
21b	**6**

Answer-Key Notes: 11+ Maths Answers

Compiled by 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 answer for each of the 60 questions on the paper. Each question is worth one mark, so scoring is straightforward: count the number of correct answers. When marking, accept equivalent forms where stated (for example, ²⁷⁄₂₀, 1 ⁷⁄₂₀, and 1·35 are all correct for question 2a). Pay close attention to units: an answer of '3120' without 'mm' in question 4a may lose the mark depending on the question's wording.

Distinguish between careless slips and genuine gaps. If a child reaches ¾ + ⅗ = ⁶⁄₉, they have misunderstood how to add fractions; if they write ²⁷⁄₂₀ = 1 ⁶⁄₂₀ instead of 1 ⁷⁄₂₀, they have made an arithmetic slip. The worked examples below explain the reasoning behind trickier answers, helping you identify which skills need further practice.

Use the score interpretation and next steps sections to decide what to do after marking. A single practice paper is a snapshot, not a verdict; mistakes are the raw material of progress.

Score interpretation

The paper contains 60 one-mark questions across twelve question groups, each testing a different strand of the Year 6 programme of study: arithmetic (questions 1–2), fractions and algebra (questions 3–4, 6–7, 20), measures and problem-solving (questions 4–5, 8–10, 15–16, 19), geometry (questions 11–12, 17–18), and logic or reasoning (questions 13–14, 21). A score above 48 (80 per cent) suggests strong readiness; 36–47 (60–79 per cent) indicates solid foundations with room to sharpen accuracy and speed; below 36 means core topics need systematic revision.

Because every question carries equal weight, losing marks on straightforward arithmetic (questions 1a–c, 2d) is more worrying than missing a multi-step problem like question 20c. Look at **which sections caused most difficulty**: repeated errors in fractions, for example, signal a need for targeted practice rather than more past papers.

Timing matters as much as knowledge. The paper allows 60 minutes, or one minute per mark. If your child scored well but finished late, speed drills and mental-maths practice will help; if they rushed and made careless mistakes, encourage a second check of each answer before moving on.

Worked examples

Fractions and mixed operations, Q2–3

These questions reward fluency with fraction arithmetic and the ability to express answers in multiple equivalent forms. Marks are often lost when students forget to simplify (for example, writing 15⁄20 instead of ¾) or when they add numerators and denominators separately instead of finding a common denominator. Decimal equivalents must be exact: 1·35 is correct for 27⁄20, but 1·3 is not.

Q2a : `27/20 or 1 7/20 or 1·35 or equivalent`

¾ + ⅗ requires a common denominator of 20, giving 15⁄20 + 12⁄20 = 27⁄20. **Any equivalent form is acceptable**: leave it as an improper fraction, convert to the mixed number 1 7⁄20, or write the exact decimal 1·35. Rounding to 1·4 would lose the mark.

Q2b : `29/42 or equivalent`

The common denominator of 7 and 6 is 42. Rewrite as 36⁄42 – 7⁄42 = 29⁄42. This fraction does not simplify further (29 is prime and shares no factors with 42), so **29⁄42 is the simplest form**. Students who write 29⁄42 = 0·69 (rounded) may lose the mark unless a decimal is explicitly requested.

Q3a : `11/16 or equivalent`

Convert to sixteenths: ½ = 8⁄16, ⅛ = 2⁄16, 1⁄16 = 1⁄16. Sum: 8 + 2 + 1 = 11, so the answer is 11⁄16. A common mistake is to add the numerators and denominators separately (1+1+1 = 3, 2+8+16 = 26, giving 3⁄26), which is incorrect. **Always find a common denominator first.**

Measures, problem-solving and rectangles, Q4–5, 9–10

Questions in this section test unit conversion, area, perimeter, and real-world proportional reasoning. Marks are lost when units are omitted (writing '3120' instead of '3120 mm'), when students confuse area with perimeter, or when they round prematurely in multi-step calculations. Show all working: examiners often award credit for method even when the final answer is wrong.

Q4a : `3120 mm`

3·12 m = 3·12 × 1000 mm = 3120 mm. The most common error is multiplying by 100 (confusing metres with centimetres) to get 312 mm. **Always check the target unit**: 1 m = 1000 mm, 1 m = 100 cm.

Q4b : `X = 25 metres, Y = 20 metres (or X = 20, Y = 25)`

The area is 500 m^2, so X × Y = 500. A square has equal sides, so we want X and Y as close as possible. The factor pairs of 500 are 1×500, 2×250, 4×125, 5×100, 10×50, 20×25. **The pair 20 and 25 differs by only 5**, making the rectangle closest to a square. Either orientation is acceptable.

Q9c : `678`

X rounds to 350, so 345 ≤ X ≤ 354. Y rounds to 320, so 315 ≤ Y ≤ 324. The largest X + Y is 354 + 324 = 678. Students who add the rounded values (350 + 320 = 670) have not understood that **rounding loses information about the original range**.

Q10b : `7 1/2 litres or 7·5`

From part (a), 600 cm^3 of petrol covers 8 km, so 1 km requires 600 ÷ 8 = 75 cm^3. For 100 km: 100 × 75 = 7500 cm^3. Convert to litres: 7500 ÷ 1000 = 7·5 litres. A common mistake is forgetting the unit conversion and writing 7500. **Check the question asks for litres, not cm^3.**

Geometry: angles, coordinates and symmetry, Q11–12, 17–18

Geometry questions reward knowledge of angle facts (angles in a triangle sum to 180°, angles on a straight line sum to 180°, vertically opposite angles are equal) and fluency with coordinate transformations. Marks are lost when students forget that an isosceles triangle has two equal angles, or when they rotate a shape in the wrong direction. Always sketch a diagram if one is not provided.

Q12a : `Y = 75 degrees`

The triangle is isosceles, so the two base angles are equal. Call each base angle Y. The angle sum is X + Y + Y = 180°. Substituting X = 30° gives 30 + 2Y = 180, so 2Y = 150 and Y = 75°. **Isosceles means two sides and two angles are equal**; identify which angles are equal before writing your equation.

Q12c : `a = 72 degrees`

Angles meeting at a point sum to 360°. Here, a + 2a + 2a = 360°, so 5a = 360° and a = 72°. A common mistake is to assume the angles sum to 180° (true only for angles on a straight line). **Check whether the angles go all the way round a point or only along one side of a line.**

Q18a : `(8, 0)`

Rotating **clockwise** by 90° about C moves B to the right of C by a distance equal to the original height of the rectangle. Originally B is at (2, 6) and C is at (2, 0), so the height is 6. After rotation, B moves 6 units to the right of C: (2 + 6, 0) = (8, 0). Sketching the rotation on graph paper prevents sign errors.

Algebra, sequences and formulae, Q7, 20–21

These questions test substitution into formulae, solving linear equations, and recognising patterns. Marks are lost when students confuse the variable (writing n = 15 when asked for the output 6n – 2 = 88) or when they set up an equation incorrectly. Always define your variable clearly and show each step: examiners can award partial credit for correct method even if the arithmetic goes wrong.

Q7i (n = 8) : `46`

Substitute n = 8 into 6n – 2: 6 × 8 – 2 = 48 – 2 = 46. The most common mistake is forgetting the order of operations and calculating 6 × (8 – 2) = 36. **Multiply before subtracting** unless brackets say otherwise.

Q7i (output = 88) : `n = 15`

Set 6n – 2 = 88. Add 2 to both sides: 6n = 90. Divide by 6: n = 15. Check: 6 × 15 – 2 = 88 ✓. Students who write 88 in the n column have misunderstood the question: **88 is the output, not the input**.

Q20b : `Y = 2 1/2`

The first rectangle has area 3 × 4y = 12y. The second has area 5 × 6 = 30. Setting them equal: 12y = 30, so y = 30 ÷ 12 = 2·5 = 2 ½. Always **write your equation explicitly** (area = area) before solving; this makes it easier to check your work and earns method marks if the arithmetic slips.

Q21b : `6`

Let the number be n. The question states $6n = n^2$. Rearrange: $n^2 – 6n = 0$, so $n(n – 6) = 0$. This gives n = 0 or n = 6. The question specifies a **positive number**, so the answer is 6. (Note: 0 × 6 = 0 and $0^2 = 0$, but 0 is neither positive nor negative.)

Logic, true/false and reasoning, Q13–14, 17

These questions test whether students can construct counter-examples, interpret percentage discounts correctly, and visualise three-dimensional nets. Marks are lost when students over-generalise from a single example (concluding that all primes are odd because 3, 5, 7 are odd, forgetting that 2 is prime) or when they apply discounts in the wrong order. Read each statement carefully and test it with at least two examples before deciding.

> **Q13a** : `False`
>
> The statement 'All prime numbers are odd' is false because **2 is a prime number and 2 is even**. A single counter-example is enough to disprove a universal statement. (Every other prime is odd, but 'all' means without exception.)

> **Q14b** : `£48·96`
>
> The sale price after 15% off is £64 × 0·85 = £54·40. The loyalty discount of 10% applies to this new price, not the original: £54·40 × 0·90 = £48·96. Students who calculate 25% of £64 (expecting £48) have misunderstood: **successive discounts multiply, they do not add**. 15% + 10% ≠ 25% when the second discount is applied to an already-reduced price.

> **Q17** : `B`
>
> Fold each net mentally and compare the positions of the three shaded squares. In nets A, C, D, and E the shaded squares occupy the same relative positions on the finished cube; in net B one shaded square is rotated relative to the others. **Check adjacent faces first**: if two shaded squares share an edge in the net, they will share an edge on the cube. Net B breaks this pattern.

Next steps

After marking, **group mistakes by topic** rather than working through the paper sequentially. If your child lost marks on questions 2a, 2b, 3a, and 3b, spend an afternoon revising how to add and subtract fractions with different denominators; if they struggled with questions 12a–c, review angle facts and practice drawing diagrams. Use a separate exercise book to rework each incorrect question from first principles, then try a similar question from a different source to check that the method has stuck.

If the score is below 50 per cent, pause further practice papers and return to topic-by-topic exercises until confidence rebuilds. If the score is above 80 per cent, focus on speed and accuracy under timed conditions: re-sit this paper in 50 minutes instead of 60, or move on to papers from other publishers to see unfamiliar question styles. Mistakes are not failures; they show you exactly what to practise next.