BRITISH COUNCIL

CBSE

Competency-based education for CBSE

Item bank:

Maths class 7

September 2021

Content created by AlphaPlus

Introduction for teachers

A bank of resources has been created to support teachers to develop and administer end-of-class tests. These resources should be used together. You can view and download the following resources from http://cbseacademic.nic.in

- Learning ladder for maths
- Assessment specification for maths
- Sample lesson plans

This document is a compilation of the sample items for maths Class 7. There are 43 items. This item bank is supported by the assessment specification, which sets out the end-of-class assessment requirements and the learning ladder for the subject, which maps the CBSE syllabi content to the NCERT curriculum. The item index (page six) shows how each item maps to the learning ladder content and the assessment objectives.

What these assessment items can be used for

You can use the bank of questions in whatever way you wish, but three main purposes have been identified:

- Create end-of-class assessments using the items from the bank to meet the requirements set out in the assessment specifications.
- Create end-of-topic tests using the items from the bank for when you finish teaching a topic.
- Use individual or groups of questions from the bank to create or add to worksheets for use in class and for homework.

What is in this document

You will find linked questions and single questions which cover different aspects of the learning ladder content and different assessment objectives. You can use these questions to create your own assessments.

Each item in this document begins with the metadata (see Figure 1). The metadata gives details of the content, assessment objective coverage, and the number of marks.

There is then a section showing any source material needed, followed by the questions themselves and finally the marking scheme for the questions.

Item identity	AO1 marks	AO2 marks	C/N/E*	Content reference from the learning ladder	Marks
Maths6AS1	1		N	6A1a Form and use algebraic expressions (up to 2 variables, including use of brackets)	1

*C = Calculator required, N = Calculator not allowed, E = Either

Figure 1: Example of metadata

How to use the assessment items

You can peruse the bank of items by flicking through this document and selecting questions you wish to use. However, if you are assessing specific content, you can use the learning ladder to identify this content and then use the item index (page six) to find any items which cover that content.

Please note that not all the content will have items. The item bank is only a sample of the questions that could be created, so it may be necessary for you to write questions of your own to fill gaps.

When you find a relevant assessment item in this document, you can copy and paste the question(s) and any source material into a new Word document which will form the assessment or worksheet. Other questions from the bank can be copied and pasted to this document and an assessment or worksheet covering a range of items created. The questions can then easily be edited in the new document using Word, and you can add any questions you write to best meet the needs of your classes.

Once the questions have been pasted into the new document, the numbering of the items can be changed so that they run through one, two, etc. There should be no need to change the numbering of parts (a), (b), etc., unless a question has been deleted.

You can create the mark schemes in the same way by copying the relevant section of the item documents and pasting them into a separate Word document, forming the mark scheme. Again, the question numbering will need to be amended. You can use these marking schemes to ensure that the marking is standardized, particularly if more than one teacher uses the assessment.

When creating an end-of-class test, the teacher should use the assessment specification to identify the number of marks and questions needed, the balance of content to be covered, and the weighting of the assessment objectives needed. You can then select items from the bank to build a test that meets the assessment specification and then order these in a logical manner so that it allows the students to work through the assessment. You should also add a front page with the assessment name and details of the number of marks and the length of the assessment. Again, the mark scheme can be created at the same time, and question numbers will need to be amended.

When copying items from the bank, care needs to be taken to keep the format and style of the items consistent, including the spacing and layout and ensuring that the number of marks available for each question is clearly linked to the question.

Assessment objectives

This document sets out the assessment objectives for CBSE mathematics and their percentage weighting for the CBSE end-of-year tests for the different classes from VI to X.

		Class				
No.	**Description of Assessment Objective**	**VI**	**VII**	**VIII**	**IX**	**X**
AO1	Demonstrate knowledge and understanding of mathematical ideas, techniques, and procedures.	50 - 65	50 - 65	50 - 65	40 – 55	40 – 55
AO2	Apply knowledge and understanding of mathematical ideas, techniques, and procedures to the classroom and real-world situations	35 - 50	35 - 50	35 - 50	45 - 60	45 - 60

Demonstrate knowledge and understanding of mathematical ideas, techniques, and procedures.

Students should be able to recall and apply mathematical knowledge, terminology, and definitions to carry out routine procedures or straightforward tasks requiring single or multi-step solutions in mathematical or everyday situations. At appropriate class levels, this would include:

- working accurately with the information presented in words, tables, graphs, and diagrams
- using and interpreting mathematical notation correctly
- using a calculator to perform calculations where appropriate
- understanding and using systems of measurement in everyday use
- estimating, approximating, and working to appropriate levels of accuracy, and converting between equivalent numerical forms
- using geometrical instruments to measure and to draw to appropriate levels of accuracy
- recognizing and using spatial relationships in two and three dimensions

Apply knowledge and understanding of mathematical ideas, techniques, and procedures to the classroom and real-world situations.

Students should be able to reason, interpret and communicate mathematically when solving problems. They should be able to analyze a problem, select a suitable strategy and apply appropriate techniques. At appropriate class levels, this would include:

- presenting arguments and chains of reasoning in a logical and structured way
- assessing the validity of an argument
- interpreting and communicating information accurately, and changing from one form of presentation to another
- solving unstructured problems by putting them into a structured form
- recognizing patterns in a variety of situations and forming generalizations

- applying combinations of mathematical skills and techniques using connections between different areas of Mathematics
- making logical deductions, making inferences, and drawing conclusions from given mathematical information, including statistical data
- interpreting results in the context of a given problem

Note: proportions for these AOs are presented as ranges. We suggest that the initial balance might use the high end of AO1 with the low end of AO2, moving over time towards increasing the proportion of AO2 over time as the new pedagogical approach is embedded.

Item Index

Topic ID	Topic	File name	Question ID	AO1	AO2
7A1a	Algebra	Maths7KG5	Maths7KG5	1	
7A1a	Algebra	Maths7KG7	Maths7KG7a	1	
7A1a	Algebra	Maths7KG7	Maths7KG7b	2	
7A1a	Algebra	Maths7KG7	Maths7KG7c	2	
7A2a	Algebra	Maths7KG4	Maths7KG4	1	
7G1a	Geometry	Maths7PK5	Maths7PK5	1	
7G1a	Geometry	Maths7PK7	Maths7PK7c	2	
7G1a	Geometry	Maths7PK4	Maths7PK4		1
7G1a	Geometry	Maths7PK7	Maths7PK7b		2
7G2a	Geometry	Maths7PK3	Maths7PK3	1	
7G2a	Geometry	Maths7RG3	Maths7RG3	1	
7G2a	Geometry	Maths7RG4	Maths7RG4b	1	
7G2a	Geometry	Maths7RG4	Maths7RG4c	1	
7G2a	Geometry	Maths7PD3	Maths7PD3		1
7G2b	Geometry	Maths7RG4	Maths7RG4a	1	
7G2b	Geometry	Maths7PK7	Maths7PK7a	2	
7G2b	Geometry	Maths7PS3	Maths7PS3	2	
7G2b	Geometry	Maths7RG2	Maths7RG2		1
7M1a	Mensuration	Maths7RKS4	Maths7RKS4	1	
7M1a	Mensuration	Maths7RKS6	Maths7RKS6a		2
7M2a	Mensuration	Maths7RKS3	Maths7RKS3		1
7M2a	Mensuration	Maths7RKS6	Maths7RKS6b		3
7M2b	Mensuration	Maths7RKS5	Maths7RKS5	1	
7M2b	Mensuration	Maths7PS4	Maths7PS4b	2	
7M2b	Mensuration	Maths7PS4	Maths7PS4a		1
7N1a	Number systems	Maths7KG2	Maths7KG2	1	
7N1a	Number systems	Maths7SK2	Maths7SK2	1	
7N1a	Number systems	Maths7PS1	Maths7PS1	1	
7N1b	Number systems	Maths7SC4	Maths7SC4	1	
7N1b	Number systems	Maths7RG1	Maths7RG1	1	
7N2a	Number systems	Maths7RKS7	Maths7RKS7	1	
7N2b	Number systems	Maths7RKS1	Maths7RKS1	1	
7N2b	Number systems	Maths7KG3	Maths7KG3	1	
7N2b	Number systems	Maths7SC3	Maths7SC3	1	
7N2b	Number systems	Maths7RKS8	Maths7RKS8	2	
7N3a	Number systems	Maths7SC2	Maths7SC2	1	
7N3b	Number systems	Maths7SC1	Maths7SC1	1	
7N3b	Number systems	Maths7SC5	Maths7SC5	1	
7N3c	Number systems	Maths7PS2	Maths7PS2	1	
7N3c	Number systems	Maths7PD2	Maths7PD2	2	
7N3c	Number systems	Maths7SC6	Maths7SC6c		2

7N3d	Number systems	Maths7PK2	Maths7PK2	1	
7N3d	Number systems	Maths7KG1	Maths7KG1	1	
7N3d	Number systems	Maths7PD6	Maths7PD6a	2	
7N3d	Number systems	Maths7PS5	Maths7PS5c		2
7N3e	Number systems	Maths7KG6	Maths7KG6a	1	
7N3e	Number systems	Maths7PD6	Maths7PD6b	2	
7N3e	Number systems	Maths7KG6	Maths7KG6b		2
7N3e	Number systems	Maths7RG5	Maths7RG5a		2
7N3e	Number systems	Maths7RG5	Maths7RG5b		2
7N4a	Number systems	Maths7PK1	Maths7PK1	1	
7N4a	Number systems	Maths7SC6	Maths7SC6b		2
7S1a	Statistics and probability	Maths7PD1	Maths7PD1	2	
7S1a	Statistics and probability	Maths7SC7	Maths7SC7b		2
7S1c	Statistics and probability	Maths7SC7	Maths7SC7a	1	
7S2a	Statistics and probability	Maths7SC6	Maths7SC6a	1	
7S2a	Statistics and probability	Maths7PS5	Maths7PS5a	1	
7S2a	Statistics and probability	Maths7PS5	Maths7PS5b	1	

Maths7KG5

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7KG5	1		N	7A1a Simplify, add, and subtract algebraic expressions: up to 2 variables, including use of brackets	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the addition of algebraic expressions up to 2 variables.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 Find the sum of 2ab, -3ab, 5ab and -2ab.

A. -12ab
B. -2ab
C. 2ab
D. 12ab (1 mark)

(Total marks 1)

Mark scheme

1 Find the sum of 2ab, -3ab, 5ab and -2ab. A. -12ab B. -2ab C. 2ab D. 12ab	
Answer	Guidance
C. 2ab	Allow 1 mark for the correct answer only

Maths7KG7

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7KG7a	1		E	7A1a Simplify, add and subtract algebraic expressions: up to 2 variables, including use of brackets	1
Maths7KG7b	2		E	7A1a Simplify, add and subtract algebraic expressions: up to 2 variables, including use of brackets	2
Maths7KG7c	2		E	7A1a Simplify, add and subtract algebraic expressions: up to 2 variables, including use of brackets	2
Total marks	**5**				**5**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the addition and subtraction of algebraic expressions up to 2 variables.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question(s)

1

1 (a) Expand $3(2ab^2 + 5)$

(1 mark)

1 (b) Add $(7ab^2 + 12)$ to $(6ab^2 - 4)$ and simplify

(2 marks)

1 (c) Subtract $(8 – 2ab^2)$ from $(13ab^2 + 12)$ and simplify

(2 marks}

(Total marks 5)

Mark scheme

1 (a) Expand $3(2ab^2 + 5)$	
Answer	Guidance
Rs $6ab^2 + 15$	Allow 1 mark for the correct answer only
1 (b) Add $(7ab^2 + 12)$ to $(6ab^2 - 4)$ and simplify.	
Answer	Guidance
$13ab^2 + 8$	M1 either $13ab^2$ OR 8 A1 $13ab^2 + 8$ Allow 2 marks for the correct answer only
1 (c) Subtract $(8 – 2ab^2)$ from $(13ab^2 + 12)$ and simplify.	
Answer	Guidance
$15ab^2 + 4$	M1 $13ab^2 + 12 – (8 – 2ab^2) = 13ab^2 + 12 – 8 + 2ab^2$ A1 $15ab^2 + 4$ Allow 2 marks for the correct answer only

Maths7KG4

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7KG4	1		N	7A2a Solve simple linear equations in 1 variable with two operations	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the solving of simple linear equations in 1 variable with two operations.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link etc.

Question

1 What are the two steps involved in solving the equation 9x – 17 = 1?

A. Adding 17 on both sides and then dividing both sides by 9.
B. Adding 17 on the left-hand side and dividing by 9 on the right-hand side.
C. Subtracting 17 on both sides and then multiplying both sides by 9.
D. Subtracting 17 on the left-hand side and multiplying by 9 on the right-hand side.

(1 mark)

(Total marks 1)

Mark scheme

1 What are the two steps involved in solving the equation 9x – 17 = 1? A. Adding 17 on both sides and then dividing both sides by 9. B. Adding 17 on the left-hand side and dividing by 9 on the right-hand side. C. Subtracting 17 on both sides and then multiplying both sides by 9. D. Subtracting 17 on the left-hand side and multiplying by 9 on the right-hand side.	
Answer	Guidance
A. Adding 17 on both sides and then dividing both sides by 9.	Allow 1 mark for the correct answer only

Maths7PK5

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Mark
Maths7PK5	1		N	7G1a Use properties of 3D shapes: angles, edges, vertices, faces, and nets: cubes, cuboids, cylinders, cones	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses properties of 3-D shapes

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 Which of these 3-D shapes is a tetrahedron?

A. Rectangular Prism
B. Rectangular Pyramid
C. Triangular Prism
D. Triangular Pyramid

(1 mark)
(Total marks 1)

Mark scheme

1 Which of these 3-D shapes is a tetrahedron? A. Rectangular Prism B. Rectangular Pyramid C. Triangular Prism D. Triangular Pyramid	
Answer	Guidance
D. Triangular Pyramid	Allow 1 mark for the correct answer only

Maths7PK7

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PK7a	2		N	7G2b Apply the sum of the angles in a triangle and exterior angle properties	2
Maths7PK7b		2	N	7G1a Identify and use properties of congruent triangles: SSS, SAS, ASA, RHS	2
Maths7PK7c	2		N	7G1a Identify and use properties of congruent triangles SSS, SAS, ASA, RHS & Apply Pythagoras theorem	2
Total marks	**4**	**2**			**6**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses finding the sum of angles in a triangle and uses of properties of triangle and congruency using rules.

Sources and diagrams

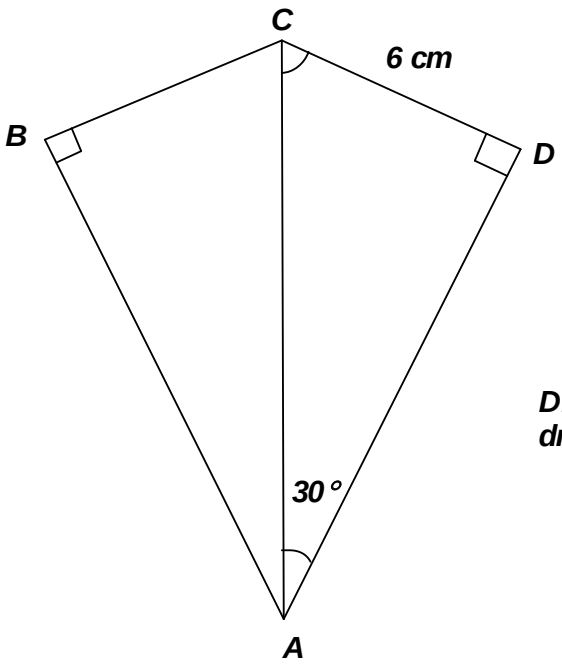

Diagram not drawn to scale

Question(s)

1 The diagram above shows two right-angled triangles.

1 (a) Find $\angle ACD$.

(2 marks)

1 (b) Describe one additional value needed to determine that the triangles are congruent, $\Delta ACB \cong \Delta ACD$. Explain your answer.

(2 marks)

I (c) In $\Delta ACB, if\ AB = 8\ cm,$ find the length of the hypotenuse.

(2 marks)

(Total marks 5)

Mark scheme

1 (a) Find $\angle ACD$	
Answer	Guidance
60°	M1: 180° - (30° + 90°) OR equivalent A1: 60° Allow 2 marks for an answer only
1 (b) Describe one additional value needed to determine that the triangles are congruent. Explain your answer.	
Answer	Guidance
CB = 6cm $\Delta ACB \cong \Delta ACD$. Using RHS (Right Angle-Hypotenuse-Side) rule. Or: one of the angles in ABC is 30^0 or 60^0 because then the triangles are	M1: Use of RHS to prove congruency OR Indication that the triangles share a hypotenuse A1 $\angle ABC = \angle ADC$ = Right angle AC = AC (As both the triangles share the same hypotenuse) Therefore, if CB = 6 cm = CD

similar (same angles) with a common side (so congruent)	Then $\Delta ACB \cong \Delta ACD$ Using RHS (Right Angle-Hypotenuse-Side) rule. Allow alternative congruency conditions with the correct additional value given.
1 (c) In $\Delta ACB, if\ AB = 8\ cm$, find the length of the hypotenuse.	
Answer	Guidance
	M1: In $\Delta ACB, if\ AB = 8\ cm$ Using the Pythagoras theorem, $AB^2 + BC^2 = AC^2$ **(In a right-angled triangle, the square of the hypotenuse side is equal to the sum of squares of the other two sides).** **A1: Allow 1 mark for stating the Pythagoras theorem. (Allow the symbol or statement)** **M2:** $AB^2 + BC^2 = AC^2$ $8^2 + 6^2 = AC^2$ 64 + 36 = AC^2 100 = AC^2 AC = 10 cm A2: Allow 1 mark for the correct answer only Allow without the unit.

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Maths7PK4

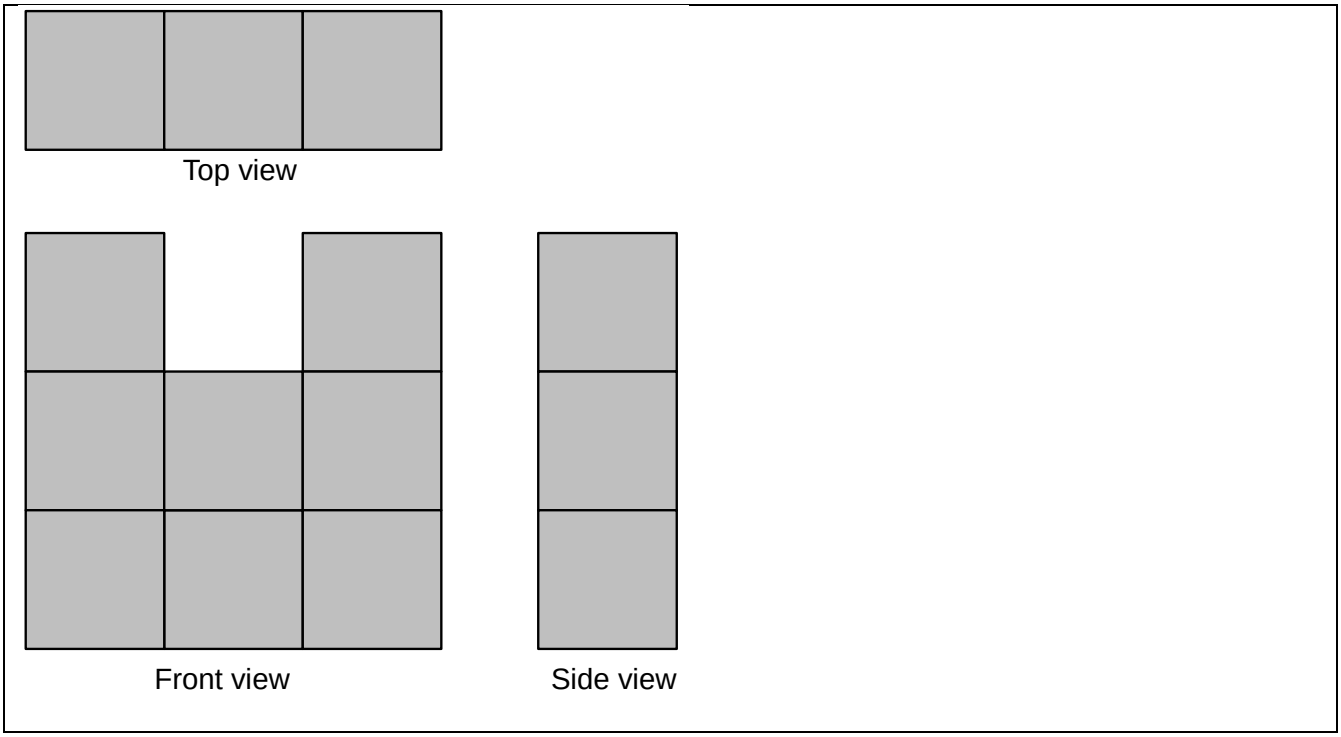
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Mark
Maths7PK4		1	E	7G1a Use properties of 3D shapes: angles, edges, vertices, faces, and nets: cubes, cuboids, cylinders, cones	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the capacity to imagine a 3-D shape using cubes.

Sources and diagrams



Question

1 The diagram above shows the top, front and side views of a model made from cubes. How many cubes are there altogether in the model?

A. 6
B. 8
C. 11
D. 14

(1 mark)

Mark scheme

1 The diagram above shows the top, front and side views of a model made from cubes. How many cubes are there altogether in the model? A. 6 B. 8 C. 11 D. 14	
Answer	Guidance
B. 8	Allow 1 mark for the correct answer only

Maths7PK3

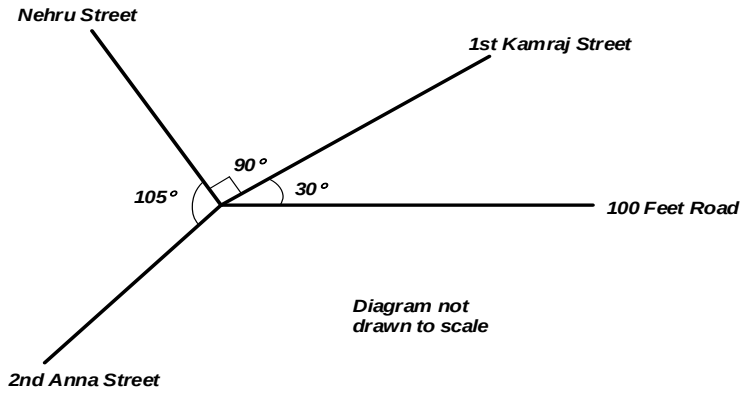
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Mark
Maths7PK3	1		N	7G2a Identify supplementary and complementary angles: adjacent angles, parallel lines with a transversal	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the capacity of the child to imagine and find the missing angles.

Source



Question

1 The Google map above shows a city square in Chennai. Find the angle formed between the 100ft Road and 2nd Anna Street in the clockwise direction.

A. 110°
B. 125°
C. 135°
D. 145°

(1 mark)

(Total marks 1)

Mark scheme

1 The Google map above shows a city square in Chennai. Find the angle that is formed between the 100ft road and 2nd Anna Street. A. 110° B. 125° C. 135° D. 145°	
Answer	Guidance
C. 135°	Allow 1 mark for the correct answer only

MathsRG3

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
MathsRG3	1		E	7G2a Identify supplementary and complementary angles: adjacent angles, parallel lines with a transversal	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the identification of supplementary and complementary angles.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 Two angles are both supplementary and vertically opposite.

What size are the angles?

(1 mark)

(Total marks 1)

Mark scheme

1 Two angles are both supplementary and vertically opposite. What size are the angles?	
Answer	Guidance
90°, 90°	Allow just one 90 or equivalent in words

Maths7RG4

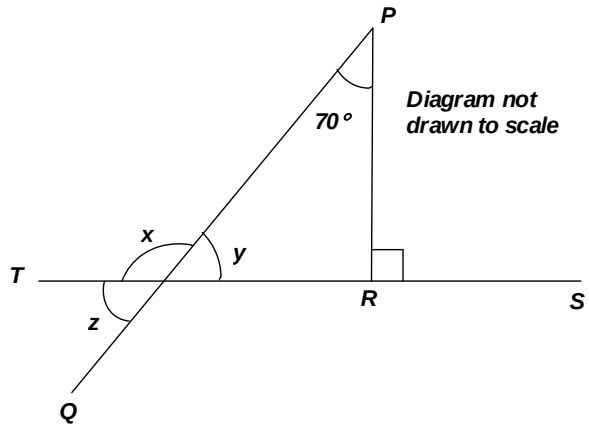
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RG4a	1		E	7G2b Apply the sum of the angles in a triangle and exterior angle properties	1
Maths7RG4b	1		E	7G2a Identify supplementary and complementary angles: adjacent angles, parallel lines with a transversal	1
Maths7RG4c	1		E	7G2a Identify supplementary and complementary angles: adjacent angles, parallel lines with a transversal	1
Total marks	**3**				**3**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the identification of supplementary and complementary angles: and angles in a triangle.

Sources and diagrams



Question(s)

1 In the given figure, $\Delta QPRQPR$ is a right-angled triangle with angle QPR = 70°.

1 (a) Find the value of y

(1 mark)

1 (b) Find the value of x

(1 mark)

1 (c) Find the value of z

(1 mark)

(Total marks 3)

Mark scheme

1 (a) Find the value of y.	
Answer	Guidance
20°	1 mark for the correct answer only
1 (b) Find the value of x.	
Answer	Guidance
160	1 mark for the correct answer only
1 (c) Find the value of z.	
Answer	Guidance
20	1 mark for the correct answer only

Maths7PD3

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PD3		1	N	7G2a Identify supplementary and complementary angles, adjacent angles, parallel lines with a transversal.	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the calculation of complementary angles from a given condition.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1. If the difference of two complementary angles is 30˚, then find the angles.

   (1 mark)

   (Total marks 1)

Mark scheme

1 The difference of the two complementary angles is 30˚, then find the angles.	
Answer	Guidance
60˚ and 30˚	A1 60˚ and 30˚ Both correct answers are required, with no half marks.

Maths7PS3

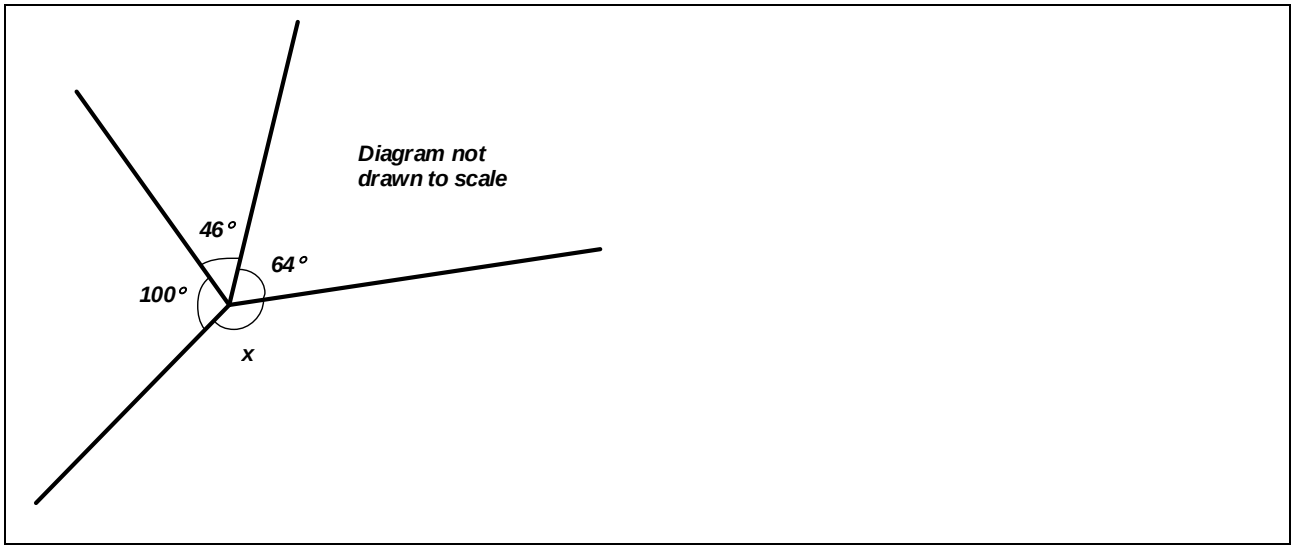
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PS3	2		N	7G2b Apply the sum of the angles in a triangle and exterior angle properties	2

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of complete angle

Source(s)



Source information: book/journal, author, publisher, website link etc. NCERT Textbook

Question(s)

1 In the diagram above, find angle x.

(2 marks)

(Total marks 2)

Mark scheme

1 In the diagram above, find angle x.	
Answer	Guidance
150^0	M1 100°+46°+64°+x = 360° OR equivalent Eg x = 360° -210° A1 150°

Maths7RG2

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RG2		1	E	7G2b Apply the sum of the angles in a triangle and exterior angle properties	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the application of the sum of the angles in a triangle property.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 In a right-angled triangle-shaped park, an angle measure 35°. What will be the measure of the third angle?

(1 mark)

Mark scheme

1 In a right-angled triangle-shaped park, an angle measure 35°. What will be the measure of the third angle?	
Answer	Guidance
55°	1 mark for the correct answer only

Maths7RKS4

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RKS4	1		N	7M1a Find the perimeter of rectilinear shapes (including faces of 3-d shapes)	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of the perimeter of a square.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 If the sum of the three sides of a square is 36 cm, what is its perimeter?

A. 12 cm
B. 36 cm
C. 48 cm
D. 144 cm

(1 mark)

(Total marks 1)

Mark scheme

1 If the sum of the three sides of a square is 36 cm, then what is its perimeter?

A. 12 cm
B. 36 cm
C. 48 cm
D. 144 cm (1 mark)

Answer	Guidance
C. 48 cm	Allow 48 also.

Maths7RKS6

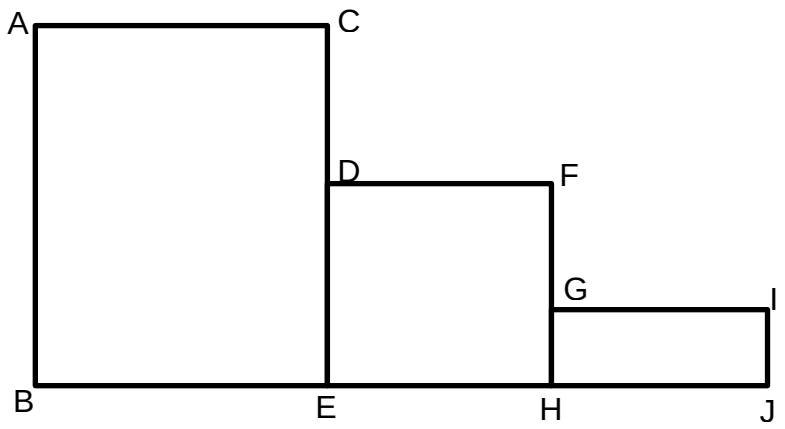
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RKS6a		2	N	7M1a Find the perimeter of rectilinear shapes (including faces of 3D shapes)	2
Maths7RKS6b		3	N	7M2a Find the area of combinations of rectilinear shapes	3
Total marks		**5**			**5**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of perimeter and area of the combination of rectilinear shapes.

Source(s)



Not to scale

Source information: Word Art

Question(s)

1 In the above figure:

ABEC is a rectangle in which AB = 12 cm and AC = 10 cm.

DFHE is a square whose side is equal to half of CE.

GHJI is a rectangle in which GH = 3 cm and HJ = 8 cm.

1 (a) What is the perimeter of the above figure? Show your working.

(2 marks)

1 (b) Find the area of the whole shape.

(3 marks)

(Total marks 5)

Mark scheme

1 (a) What is the perimeter of the above figure?	
Answer	Guidance
72 cm	M1 Perimeter = perimeter of a rectangle with sides AB and BJ = 2 (12 + (10 + 12/2 + 8)) OR equivalent including all line segments A1 72 (cm) Allow 1 mark for the correct answer only
1 (b) Find the area of the whole shape.	
Answer	Guidance
A1 180 cm^2	M1 area = sum of three rectangles AND area of a rectangle = length x breadth M1 Area = 12x10 + 6x6 +3x8 A1 180 cm^2

Maths7RKS3

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RKS3		1	N	7M2a Find the area of combinations of rectilinear shapes	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of area of combination of rectilinear shapes.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 The diagram above of ABCDEF is a 6-sided shape with all sides of different lengths.

How many measurements of the sides of the above figure are sufficient for calculating its area?

A. 3
B. 4
C. 5
D. 6

(1 mark)

Mark scheme

How many measurements of the sides of the above figure are sufficient for calculating its area?

A. 3
B. 4
C. 5
D. 6

Answer	Guidance

B. 4	

Maths7RKS5

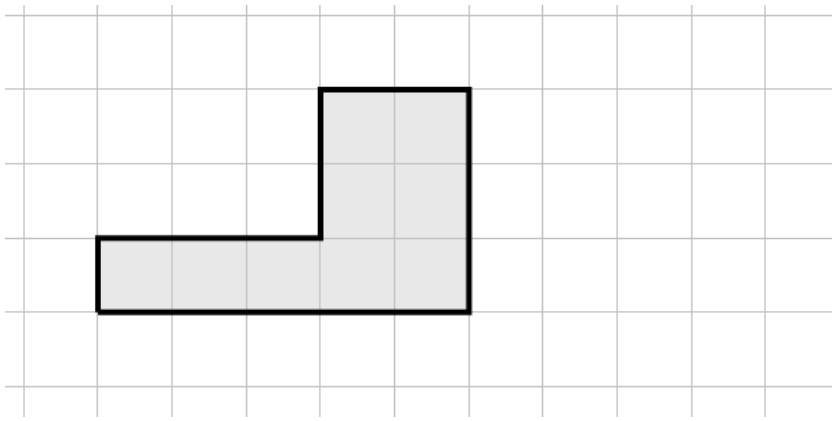
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RKS5	1		N	7M2b Estimate area of closed, irregular shapes by using a grid	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of calculating the area of closed shapes by using a grid.

Source(s)



Question(s)

1 In the figure, each square is of 1cm length then what is the area of the shaded figure?

A. 9 cm^2
B. 16 cm^2
C. 18 cm^2
D. 32 cm^2
(1 mark)

(Total marks 1)

Mark scheme

1 In the figure, each square is of 1cm length then what is the area of the shaded figure? A. 9 cm^2 B. 16 cm^2 C. 18 cm^2 D. 32 cm^2	
Answer	Guidance
A. 9 cm^2	Allow 9 also.

Maths7PS4

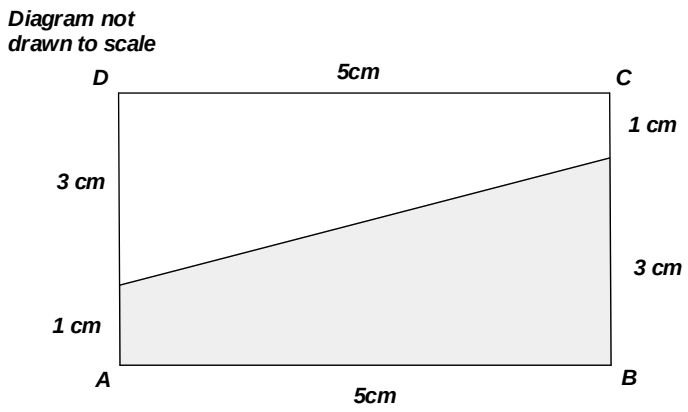
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PS4a		1	C	7M2b Estimate areas of closed, irregular shapes using a grid	1
Maths7PS4b	2		C	7M2b Estimate areas of closed, irregular shapes using a grid	2
Total marks	**2**	**1**			**3**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the area of a rectangle

Source(s)



Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 ABCD is a rectangle:

1(a) What is the shape of the shaded region? (1 mark)

1(b) What is the area of the shaded region? (2 marks)

(Total marks 3

Mark scheme

1 (a) What is the shape of the shaded region	
Answer	Guidance

Trapezium	Trapezium
1(b) What is the area of the shaded region?	
Answer	Guidance
10 cm^2	M1 = ½ x 5 x 4 OR equivalent A1 10 cm^2

Maths7KG2

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7KG2	1		N	7N1a Multiply integers up to 3 digits.	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the multiplication of integers.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 Determine the integer whose product with (-1) is -64?

A. -64
B. 0
C. 1
D. 64

(1 mark)

(Total marks 1)

Mark scheme

1 Determine the integer whose product with (-1) is -64? A. -64 B. 0 C. 1 D. 64	
Answer	Guidance
D. 64	Allow 1 mark for the correct answer only

Maths7SK2

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SK2	1		C	7N1a Multiply integers up to 3 digits	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of multiplication of integers with opposite signs.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 Find the product of (-20) x (500)

(1 mark)

(Total marks 1)

Mark scheme

1 Find the product of (-20) x (500)	
Answer	Guidance
-10,000	1 mark

Maths7PS1

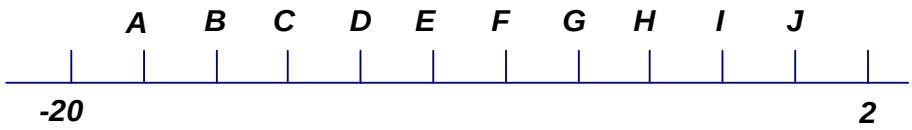
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PS1	1		E	7N1a Multiply integers up to 3 digits	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the multiplication of integers

Source(s)



Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 On the above number line above, which point represents (- 4) × 3?

(1 mark)

(Total marks 1)

Mark scheme

1 On the above number line above, which point represents (- 4) × 3?	
Answer	Guidance
D	(-4) × 3 = – 12 ∴ -12 is represented by point D.

Maths7SC4

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SC4	1		N	7N1b Divide integers up to 3 digits divided by up to 2 digits with rational results	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the division of integers.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 If 28 trousers of equal size can be made from 63m of cloth, what length of cloth is required for one trouser?

A. $\frac{3}{4}m$

B. $\frac{5}{4}m$

C. $\frac{7}{4}m$

D. $\frac{9}{4}m$

(1 mark)

(Total marks 1)

Mark scheme

1 If 28 trousers of equal size can be made from 63m of cloth, what length of cloth is required for one trouser?

A. $\frac{3}{4}m$

B. $\frac{5}{4}m$

C. $\frac{7}{4}m$ D. $\frac{9}{4}m$	
Answer	Guidance
D. $\frac{9}{4}m$	Allow 1 mark for the correct answer only.

Maths7RG1

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RG1	1		C	7N1b Divide integers up to 3 digits divided by up to 2 digits with rational results	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the division of integers up to 3 digits divided by up to 2 digits with rational results.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 Evaluate: (-570 + 50) ÷ (-430 - 90)

(1 mark)

(Total marks 1)

Mark scheme

1 Evaluate: (-570 + 50) ÷ (-430 - 90)	
Answer	Guidance
1	1 mark for the correct answer only

Maths7RKS7

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RKS7	1		N	7N2a Express and use numbers with positive integer indices	1
Total marks	**1**				**1**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of representing large numbers in exponential form, using percentages to calculate simple interest, and using the law of exponents.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 Represent the mass of earth in the form of $P \times 10^m$ where P is an integer between 1 and 10 and m is also a positive integer.

Mass of earth = 5,972,000,000,000,000,000,000,000 kg

(1 mark)

(Total marks 1)

Mark scheme

1 Represent the mass of earth in the form of $P \times 10^m$ where P is an integer between 1 and 10 and m is also a positive integer.

Mass of earth = 5,972,000,000,000,000,000,000,000 kg

(1 mark)

Answer	Guidance
$=5.972\times10^{24}$kg	Allow 5.972×10^{24} also.

Maths7RKS1

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Mark
Maths7RKS1	1		N	7N2b Apply laws of exponents to positive integers: multiply, divide, and powers	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the application of laws of exponents.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 What is the value of $(3^0 \times 7^0) + 6^0$?

A. 0
B. 1
C. 2
D. 27

(1 mark)

Mark scheme

1 What is the value of $(3^0 \times 7^0) + 6^0$? A. 0 B. 1 C. 2 D. 27	
Answer	Guidance
C. 2	1 mark for the correct answer only

Maths7KG3

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7KG3	1		N	7N2b Apply laws of exponents to positive integers: multiply, divide, and powers.	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the application of laws of exponents.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 Find the value of $(100^0 + 69^0) \times 72^0$.

A. 0
B. 1
C. 2
D. 3

(1 mark)

(Total marks 1)

Mark scheme

1 Find the value of $(100^0 + 69^0) \times 72^0$ A. 0 B. 1 C. 2 D. 3	
Answer	Guidance
C. 2	Allow 1 mark for the correct answer only

Maths7SC3

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SC3	1		N	7N2b Apply laws of exponents to positive integers: multiply, divide and powers	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the Application of Exponential laws on positive integers.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 What is the value of $5^2 \div [(100)^2]^0$?

A. 5
B. 25
C. 100
D. 200

(1 mark)

Mark scheme

1 What is the value of $5^2 \div [(100)^2]^0$?

A. 5
B. 25
C. 100
D. 200

Answer	Guidance
B. 25	Allow 1 mark for the correct answer only

Maths7RKS8

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7RKS8	2		N	7N2b Apply laws of exponents to positive integers: multiply, divide, and powers	2
Total marks	**2**				**2**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the and use of the law of exponents.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 Simplify-

$$\frac{25^2 \times 3^4}{15^2}$$

(2 marks)

(Total marks 2)

Mark scheme

1 Simplify- $\frac{25^2 \times 3^4}{15^2}$	
Answer	Guidance
225	$= \frac{(5^{2^2} \times 3^4)}{(3\times5)^2}$ M1 $= \frac{5^4 \times 3^4}{3^2 \times 5^2}$ (1 mark) $= 5^{4-2} \times 3^{4-2}$ A1 $= 5^2 \times 3^2$ (1 mark) OR $= 25 \times 9$

	OR =225 Alternative method- M1 $=\frac{5\times5\times5\times5\times3\times3\times3\times3}{3\times3\times5\times5}$ (1 mark) A1 $= 5\times 5 \times 3 \times 3$ (1 mark) OR $= 25\times 9$ OR =225 Alternative method- M1 $= \frac{15^4}{15^2}$ (1 mark) A1 $= 15^2$ (1 mark) Or $= (3 \times 5)^2$ Or =225 Allow 2 marks for the correct answer only

Maths7SC2

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SC2	1		N	7N3a Multiply proper fractions	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses knowledge of the smallest and largest fraction from the list and their product.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 What is the product of the largest and the smallest fraction from the following list?

$\frac{9}{11}, \frac{3}{11}, \frac{7}{11}, \frac{5}{11}, \frac{10}{11}, \frac{6}{11}$

A. $\frac{18}{121}$

B. $\frac{30}{121}$

C. $\frac{35}{121}$

D. $\frac{90}{121}$

(1 mark)

(Total marks 1)

Mark scheme

1 What is the product of the largest and the smallest fraction from the following list:

$\frac{9}{11}, \frac{3}{11}, \frac{7}{11}, \frac{5}{11}, \frac{10}{11}, \frac{6}{11}$

A. $\frac{18}{121}$

B. $\frac{30}{121}$

C. $\frac{35}{121}$

D. $\frac{90}{121}$

Answer	Guidance
B. $\frac{30}{121}$	Allow 1 mark for the correct answer only

Maths7SC1

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SC1	1		N	7N3b Divide proper fractions	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the division of proper fractions.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 The product of two numbers is $\frac{28}{81}$. If one number is $\frac{14}{27}$, find the other number.

A. $\frac{1}{3}$

B. $\frac{1}{4}$

C. $\frac{2}{3}$

D. $\frac{3}{4}$

(1 mark)

Mark scheme

1 The product of two numbers is $\frac{28}{81}$. If one number is $\frac{14}{27}$, find the other number.

A. $\frac{1}{3}$

B. $\frac{1}{4}$

C. $\frac{2}{3}$

D. $\frac{3}{4}$

Answer	Guidance
C. $\frac{2}{3}$	Allow 1 mark for the correct answer only

Maths7SC5

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SC5	1		N	7N3b Divide proper fractions	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses division of proper fractions.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 By what number should $\frac{1}{2}$ be divided to get $\frac{2}{3}$?

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$

D. $\frac{3}{4}$

(1 mark)

(Total marks 1)

Mark scheme

1 By what number should $\frac{1}{2}$ be divided by to get $\frac{2}{3}$?

A. $\frac{1}{4}$

B. $\frac{1}{3}$

C. $\frac{2}{3}$ D. $\frac{3}{4}$	
Answer	Guidance
D. $\frac{3}{4}$	Allow 1 mark for the correct answer only

Maths7PS2

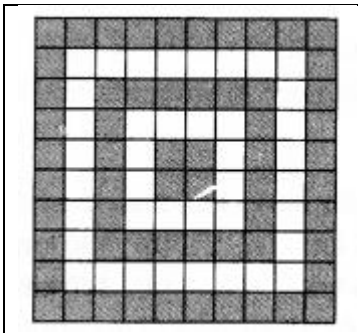
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PS2	1		C	7N3c Convert between percentages, fractions, and decimals	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the calculation of percentage

Source(s)



Source information: book/journal, author, publisher, website link, etc. NCERT Exemplar

Question(s)

1 In the diagram above, what percentage of the figure is shaded?

(1 mark)

(Total marks 1)

Mark scheme

1 In the diagram above, what percentage of the figure is shaded?	
Answer	Guidance
40%	Number of squares in total= 100 Number of unshaded squares=40 Percentage= 40

Maths7PD2

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PD2	2		C	7N3c Convert between percentages, fractions, and decimals.	2

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the knowledge of percentages.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 Find the value of x if 45% of x marks is 405

(2 marks)

(Total marks 2)

Mark scheme

1 Find the value of x if 45% of x marks is 405	
Answer	Guidance
900	M1 405 x 100/45 OR equivalent A1 900 Allow 2 marks for the correct answer only

Maths7SC6

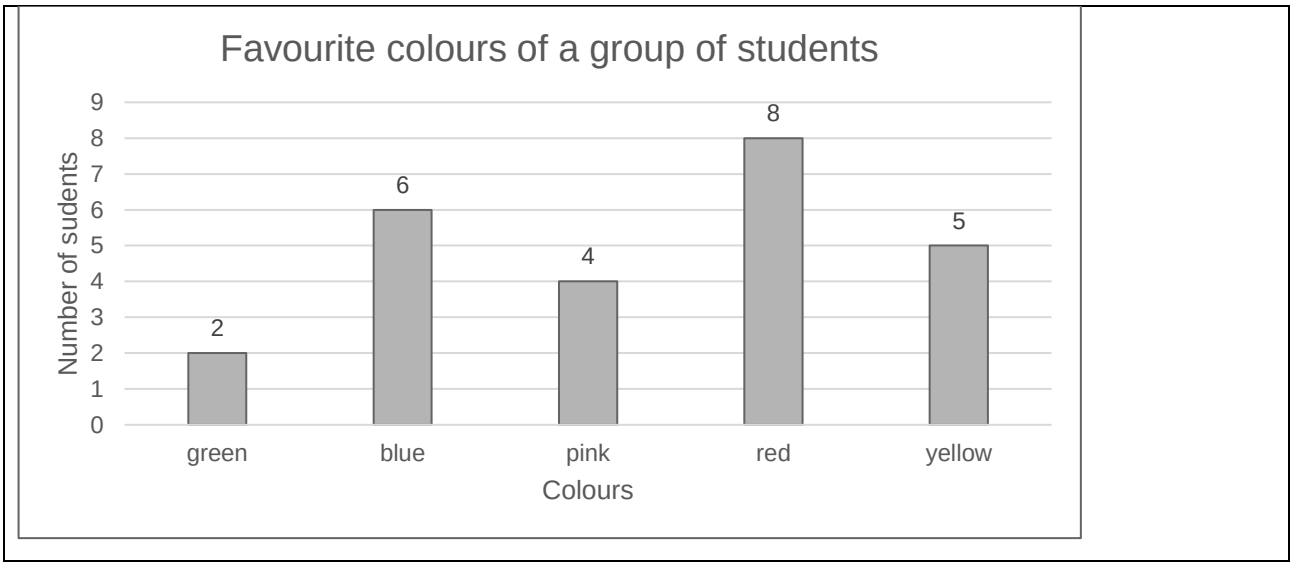
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SC6a	1		N	7S2a Draw and interpret charts for discrete data	1
Maths7SC6b		2	N	7N4a Simplify ratios and identify equal ratios or pairs of quantities in the same proportion	2
Maths7SC6c		2	N	7N3c Convert between percentages, fractions, and decimals	2
Total marks	**1**	**4**			**5**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses interpretation of a bar graph

Source(s)



Source information: Excel

Question(s)

1 Read the graph and answer the following questions.

1 (a) Which is the favourite colour of most students? (1 mark)

1 (b) Find the ratio of the number of students whose favourite colour is blue and the number of students whose favourite colour is pink.

Convert the ratio into its simplified form. (2 marks)

1 (c) What percentage of all 30 students represents students whose favourite colour is red, blue, or yellow? Show your working. (2 marks)

(Total Marks 5)

Mark scheme

1 (a) Which is the most favourite colour of students?	
Answer	Guidance
Red	Allow 1 mark for the correct answer only
1 (b) Find the ratio of the number of students whose favourite colour is Blue and the number of students whose favourite colour is Pink. Convert the ratio into a simplified form.	
Answer	Guidance
Ratio= 3: 2	M1 Ratio = 6: 4 OR $\frac{6}{4}$ A1 Ratio = 3: 2 Allow 2 marks for obtaining correct answer Allow 2: 3
1 (c) What percentage of total students represents students whose favourite colour is a primary colour? Show working also.	
Answer	Guidance

76%	M1 Total number of students having favourite colour Blue, Red, Yellow = 6+8+5 = 19 Percentage = $\frac{19}{25}$ X 100 Allow their 6+8+5 for 19 A1 = 76% Allow 2 marks for the correct answer only

Maths7PK2

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Mark
Maths7PK2	1		N	7N3d Calculate a number as a percentage of another, including percentage profit or loss in a single transaction.	1

*C = Calculator required, N = Calculator not allowed, E = Either

Item purpose

The question assesses the capacity to convert and calculate percentages to values.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 2.5% of the Indian rivers flow in Tamil Nadu. If the total number of rivers in India is 400, find the number of rivers in Tamil Nadu.

A. 10
B. 25
C. 40
D. 55

(1 mark)

Mark scheme

1 2.5% of the Indian rivers flow in Tamil Nadu. If the total number of rivers in India is 400, find the number of rivers in Tamil Nadu.

A. 10
B. 25
C. 40
D. 55

Answer	Guidance
A. 10	Allow 1 mark for the correct answer only

Maths7KG1

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7KG1	1		N	7N3d Calculate a number as a percentage of another, including percentage profit or loss in a single transaction.	1

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the percentage of one number to another.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 The salary of Shruti is Rs 12,000. She saves 10% of her salary. How much does she save?

A. Rs 1100
B. Rs 1200
C. Rs 1300
D. Rs 1400

(1 mark)

(Total marks 1)

Mark scheme

1 The salary of Shruti is Rs12,000. She saves 10% of her salary. How much does she save?	
Answer	Guidance
B. Rs 1200	Allow 1 mark for the correct answer only

Maths7PD6

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PD6a	2		C	7N3d Calculate a number as a percentage of another, including percentage profit or loss in a single transaction.	2
Maths7PD6b	2		C	7N3e Calculate using percentages including simple interest: time period in complete years.	2
Total marks	**4**				**4**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses how to calculate the selling price and simple interest.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question(s)

1 Amaira purchased a house for Rs 5,100,000 and sold it at a profit of 5%.

1 (a) How much was the selling price? (2 marks)

1 (b) If Amaira had deposited the amount she paid for the house into the bank, how much simple interest would she have received after 3 years at 10% per annum? (2 marks)

(Total marks 4)

Mark scheme

1 Amaira purchased a house for Rs.51,00,000 and sold it at a profit of 5%. (a) How much was the selling price?	
Answer	Guidance

Rs 5,355,000	M1: Selling price = Rs 5,100,000 + $\frac{5}{100} \times Rs.5{,}00{,}000$ Or equivalent A1 = (Rs). 5,355,000
1 (b) If Amaira had deposited the amount she paid for the house into the bank, how much simple interest would she have received after 3 years at 10% per annum?	
Answer	Guidance
Rs. 1,530,000	M1: Simple Interest = $\frac{5{,}100{,}000 \times 3 \times 10}{100}$ A1: (Rs) 1,530,000

Maths7PS5

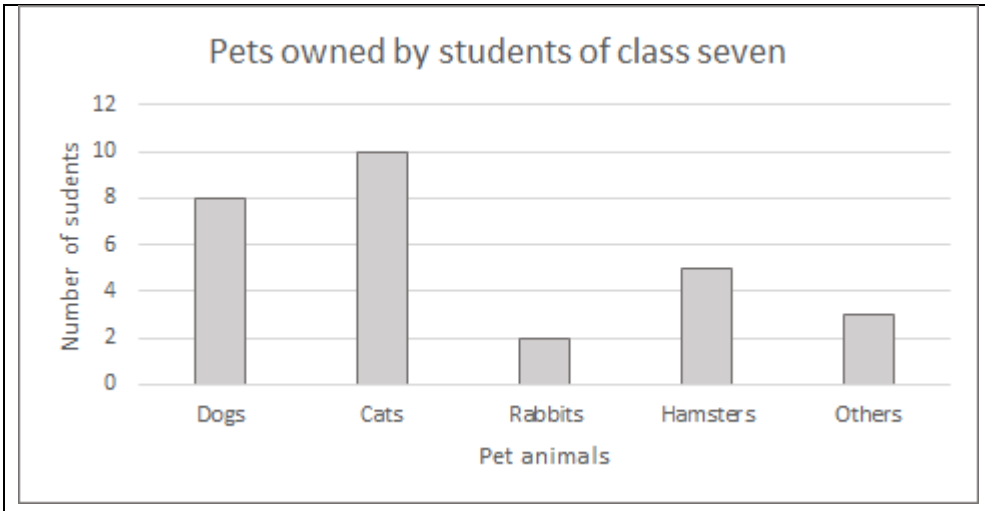
Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PS5a	1		C	7S2a Draw and interpret charts for discrete data	1
Maths7PS5b	1		C	7S2a Draw and interpret charts for discrete data	1
Maths7PS5c		2	C	7N3d Calculate a number as a percentage of another, including percentage profit or loss in a single transaction	2
Total marks	**2**	**2**			**4**

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses interpretation of bar graphs

Source(s)



Source information: Excel

Question(s)

1	Use the bar graph to answer the following questions	
1 (a)	Which is the most popular pet?	(1 mark)
1 (b)	How many students have dogs as pets?	(1 mark)
1 (c)	What percentage of students own dogs? What is the percentage of students who like dogs?	(2 marks)

Mark scheme

1 (a) Which is the most popular pet?	
Answer	Guidance
Cats	1 mark for the correct answer only
1 (b) How many students have a dog as a pet?	
Answer	Guidance
8	1 mark for the correct answer only
1 (c) What percentage of students own dogs?	
Answer	Guidance

$\frac{200}{7}$ %	M1 8 / (8 + 10 + 2 + 5 + 3) x 100

Maths7KG6

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7KG6a	1		N	7N3e Calculate using percentages including simple interest: time period in complete years	1
Maths7KG6b		2	N	7N3e Calculate using percentages including simple interest: time period in complete years	2
Total marks	**1**	**2**			**3**

*C = Calculator required, N = Calculator not allowed, E = Either

Item purpose

The question assesses the simple interest received in a certain time period and the rate percent per annum.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question(s)

1 Anuj and Urvashi invested Rs 8,000 in a simple interest scheme. After 10 years, Anuj had an amount of Rs 18,000.

1(a) Calculate the total interest Anuj received (1 mark)

1 (b) After 6 years, Urvashi had earned Rs 6,000 interest. Find out the interest rate percent per annum. Show your working. (2 marks)

(Total marks 3)

Mark scheme

1 (a) Calculate the total interest Anuj received.	
Answer	Guidance
Rs 10,000	M1 Interest = Amount – Principal Interest = Rs 18,000 – Rs 8,000 = Rs 10,000 Allow 1 mark only for correct answer.
1 (b) After 6 years, Urvashi had earned Rs 6,000 interest. Find out the interest rate percent per annum. Show your working.	
Answer	Guidance
12.5 %	M1 6,000 = (8,000 × Rate of interest × 6) / 100 OR Rs 1000 interest per year Rate = 10% x 1000/8000 OR equivalent A1 Rate of interest = 12.5 (%) Answer only 1 mark

Maths7RG5

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
MathsRG5a		2	C	7N3e Calculate using percentages including simple interest: time period in complete years	2
MathsRG5b		2	C	7N3e Calculate using percentages including simple interest: time period in complete years	2
Total marks		**4**			**4**

*C = Calculator required, N = Calculator not allowed, E = Either

Item purpose

The question assesses the percentage decreases.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question(s)

1 Milly earned Rs 50,000 per month. She spent 85% of her salary and saved the rest. She used to spend a quarter of her salary on food each month. Due to the pandemic, her monthly food spends increased by 20%.

1 (a) Calculate what her monthly savings were.

(2 marks)

1 (b) Find her new monthly spend on food.

(2 marks)

(Total marks 4)

Mark scheme

1 (a) Calculate what her monthly savings were.	
Answer	Guidance

Rs 40,000	M1 $\frac{(100-85)}{100} \times 50000$ OR equivalent A1 Rs 7,500 If correct answer award 2 marks Allow missing Rs
1 (b) Find her new monthly spend on food.	
Answer	Guidance
Rs 15,000	M1 $\frac{1}{4} \times 50{,}000 \times \frac{(100+20)}{100}$ OR equivalent Both a quarter and 20% increase needed for 1 mark A1 Rs 15,000 If correct answer award 2 marks Allow missing Rs

Maths7PK1

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Mark
Maths7PK1	1		N	7N4a Simplify ratios and identify equal ratios or pairs of quantities in the same proportion	1

*C = Calculator required, N = Calculator not allowed, E = Either

Item purpose

The question assesses the capacity to identify and compare two quantities.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 If a healthcare company produces 30,000 masks in an hour, find the number of masks it would produce in 10 minutes.

A. 3,000
B. 4,500
C. 5,000
D. 5,500

(1 mark)
(Total marks 1)

Mark scheme

1 If a healthcare company produces 30,000 masks in an hour, find the number of masks it would produce in 10 minutes.

A. 3,000
B. 4,500
C. 5,000
D. 5,500

Answer	Guidance
C. 5,000	Allow 1 mark for the correct answer only

Maths7PD1

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7PD1	2		E	7S1a Calculate the mean of a set of numbers.	2

*C = Calculator required, N = Calculator not allowed E = Either

Item purpose

The question assesses the concept of calculating the mean of the given data.

Sources and diagrams

Source information if copied: book/journal, author, publisher, website link, etc.

Question

1 Calculate the mean of the first five prime numbers, starting with 2.

(2 marks)

(Total marks 2)

Mark scheme

1. Calculate the mean of first five prime numbers.	
Answer	Guidance
5.6	M1 (2+3+5+7+11)/5 A1 5.6 Allow 2 marks for the correct answer only

Maths7SC7

Item identity	AO1 marks	AO2 marks	C/N/E*	Content Reference(s)	Marks
Maths7SC7a	1		E	7S1c Find the mode of a set of numbers, frequency table, or graph	1
Maths7SC7b		2	E	7S1a Calculate the mean of a set of numbers	2
Total marks	**1**	**2**			**3**

*C = Calculator required, N = Calculator not allowed, E = Either

Item purpose

The question assesses the calculation of the mean (representative value) of given data.

Source(s)

Source information: book/journal, author, publisher, website link, etc.

Question(s)

1 During the Diwali party, a group of people played a dice game. A dice was thrown 9 times, and the outcomes were:

2, 4, 1, 2, 4, 5, 4, 6, 6

1 (a) What is the mode for these scores? (1 mark)

1 (b) Find the mean score. Show your working. (2 marks)

(Total marks 4)

Mark scheme

1 (a) What is the mode for these scores?	
Answer	Guidance
x = 5	Allow 1 mark for the correct answer only

1 (b) Find the mean score. Show your working.	
Answer	Guidance
Mean = 4	M1 Total= 2+4+1+2+6+5+4+6+6 = 36 AND Mean = (their 36)/ 9 A1 = 4 1 mark answer only