Curriculum Aligned Competency Based Test Items
Mathematics
Class 8 – Chapter 3
Understanding Quadrilaterals

The floor of a house can be made by laying wooden planks parallel to one another. Anuj uses planks of length and width 150 cm and 30 cm, respectively, for making the floor of his house.

SAS21M08S0301

1 The floor of his study is rectangular, 4.5 m long and 3 m wide.
What is the minimum number of planks required to cover its floor?

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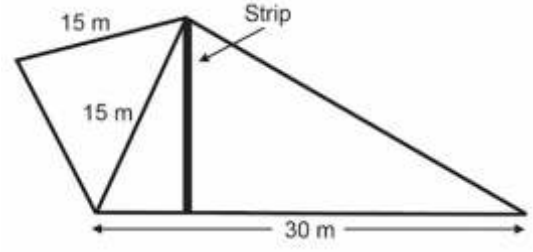
Anuj lays a wooden floor for a kite-shaped room. He places the strips such that they are perpendicular to the longest side of the room vertically. One strip is shown in the figure.
What is the minimum number of planks required to cover its floor?

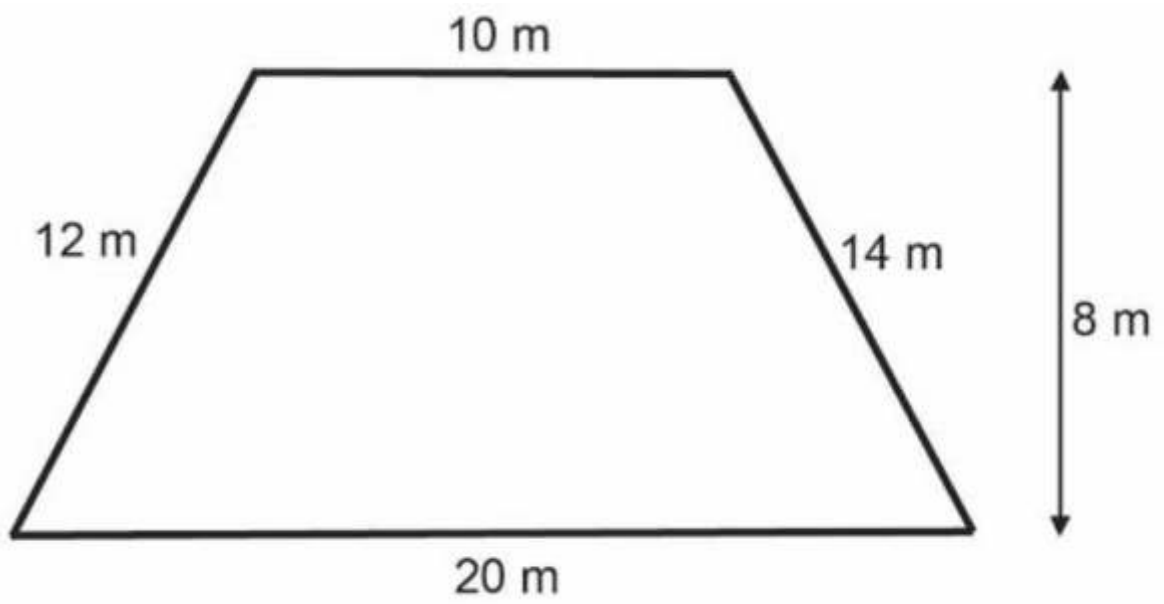


SAS21M08S0302

2 What is the approximate length (in m) of the strip in the figure?

A. 10
B. 14.6
C. 15
D. 22.5

Another floor in Anuj's house is in the shape of a trapezium.



SAS21M08S0303

3 The floor is divided into two parts having equal areas to lay planks. In each area, different colour planks are used. Suggest a way in which it could be done.

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SAS21M08S0304

4 Anuj has two pairs of planks of different lengths. Which geometric shape should he make with the four planks to enclose the maximum area?

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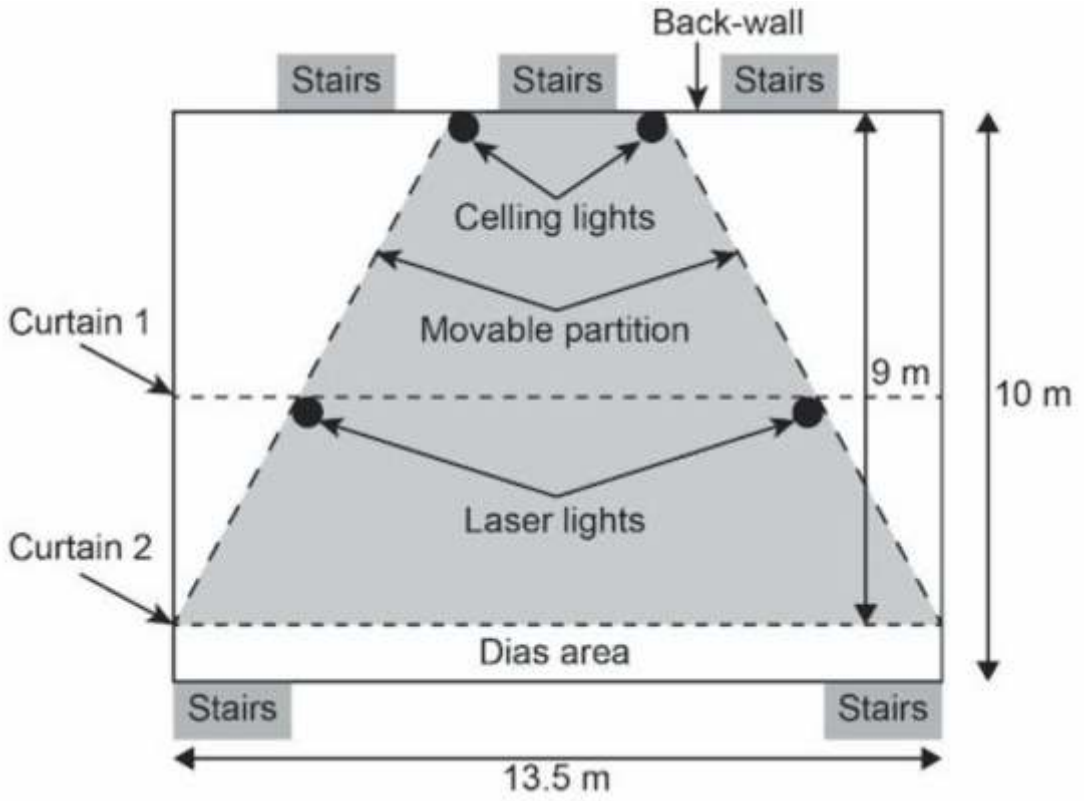
The figure below shows the layout of a rectangular stage in an auditorium. Two movable flexible partitions of equal lengths mark the performance area. The shaded portion in the figure below shows the performance area.



The movable partitions divide the back-wall into three equal parts.

SAS21M08S0305

5 Which of these is the angle between the movable partition and the back-wall?

A. 30°
B. 45°
C. 60°
D. 90°

SAS21M08S0306

6 The celling lights can turn by 90° along the vertical plane.
To cover only the performance area, what is the maximum angle the lights can turn along the horizontal plane?

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SAS21M08S0307

7 The performance area is in the shape of trapezium. The performance area can be divided into two congruent halves.
Which property should the trapezium have to ensure congruent halves?

A. It should have four sides
B. It should have two parallel sides
C. It should have a pair of equal side lengths
D. It should have two parallel sides of unequal lengths

SAS21M08S0308

8 The dotted line representing Curtain 1 joins the mid-points of the movable partitions.
What is the length of the curtain line between the movable partitions?

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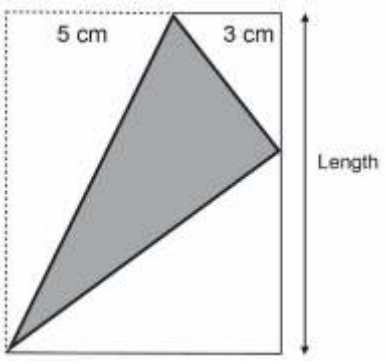
SAS21M08S0309

9 Two laser light beams are flashed from the two ends of the Curtain 1 line. The beams intersect each other at the mid-point of the Curtain 2 line.
At what angle to Curtain 1 line are the light beams flashed?

A. 0°
B. 45°
C. 60°
D. 120°

Vanita folds a rectangular sheet. The folded sheet is shown below.



SAS21M08S0310

10 What is the length of the sheet?

A. 8 cm
B. $\sqrt{10}$ cm
C. 10 cm
D. 12 cm

Answers

Item Number	Question 1
Question Code	SAS21M08S0301
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Interpret & Evaluate
Item Type	Closed Constructed Response
Full Credit (Full Score)	30
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21M08S0302
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 14.6
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21M08S0303
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Interpret & Evaluate
Item Type	Closed Constructed Response
Full Credit (Full Score)	Trapeziums, the description explains how division is done • Trapeziums, to form them divide the floor into equal parts by joining the midpoints of the parallel sides. • Trapeziums, divide the floor by drawing a line parallel to given sides such that area of two trapeziums are equal.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21M08S0304
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Interpret & Evaluate
Item Type	Closed Constructed Response
Full Credit (Full Score)	Rectangle
Partial Credit (Partial Score)	Parallelogram, Kite, Quadrilateral
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21M08S0305
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. 60°
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21M08S0306
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Formulate
Item Type	Closed Constructed Response
Full Credit (Full Score)	120° or 120
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21M08S0307
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. It should have a pair of equal side lengths.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21M08S0308
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Employ
Item Type	Closed Constructed Response
Full Credit (Full Score)	9 m
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21M08S0309
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 45°
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21M08S0310
Grade & Chapter Name	Grade 8 | Understanding Quadrilaterals
Concept | Sub-concept	Geometry | Polygons (Kinds of Quadrilaterals)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. 10 cm
No Credit (No Score)	Any other response or missing response