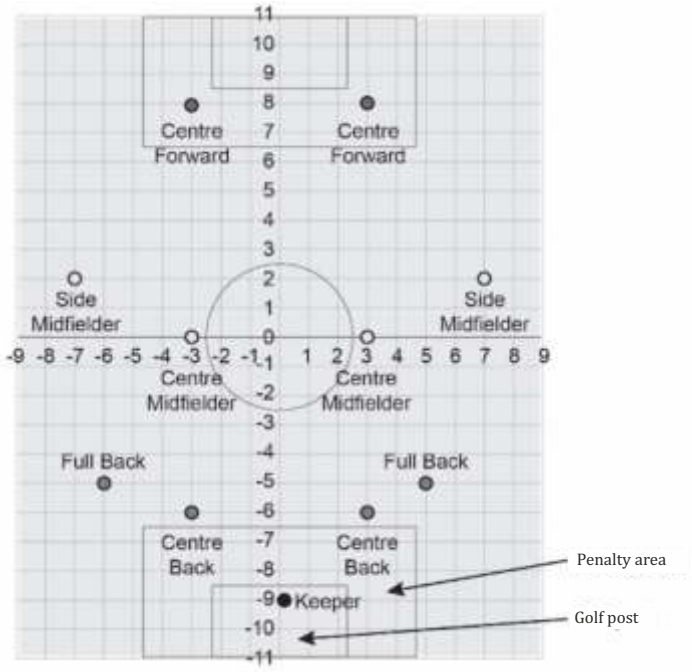
Curriculum Aligned Competency Based Test Items
Mathematics
Class 10 – Chapter 7
Coordinate Geometry

Ronit is the captain of his school football team. He has decided to use a 4-4-2-1 formation in the next match. The figure below shows the positions of the players in a 4-4-2-1 formation on a coordinate grid.



One square box represents 1 square unit.

SAS21M10S0701

1 Which of the following coordinates represents the position of the goalkeeper?

A. (9, –9)
B. (0, 9)
C. (–9, 0)
D. (0, –9)

SAS21M10S0702

2 What is the distance between the two centre forward positions in Ronit's plan?

A. 3 units
B. 6 units
C. $5\sqrt{2}$ units
D. 16 units

SAS21M10S0703

3 Mention two positions which are not equidistant from any axis.

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SAS21M10S0704

4 Which two positions are on the line $2.5y - x - 11 = 0$?

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SAS21M10S0705

5 What is the area (in square units) of the football field enclosed by the lines joining the two centre back positions and the goalkeeper's position?

A. 0 square units
B. 10.5 square units
C. 24 square units
D. 110.25 square units

SAS21M10S0706

6 A ball hit from the left full back position travels uninterrupted to the right centre forward position. What can be the minimum distance travelled by the ball?

A. 22 units
B. $\sqrt{178}$ units
C. $5\sqrt{10}$ units
D. 250 units

SAS21M09S0907

7 What is the area of the middle circle?

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SAS21M09S0908

8 A ball hit from the left centre midfielder position touches the point (2, 11).
Does the ball enter the goal post? Justify your answer.

_____

_____

SAS21M10S0709

9 What are the coordinates of the point on the y-axis which is equidistant from the left centre forward and the right centre midfielder positions?

A. (0, 0)
B. (0, 2)
C. (0, 4)
D. (0, 8)

SAS21M10S0710

10 What is the measure of the penalty area for one team?

A. $10\ m^2$
B. $17\ m^2$
C. $25\ m^2$
D. $29.25\ m^2$

Answers

Item Number	Question 1
Question Code	SAS21M10S0701
Grade & Chapter Name	Grade 10 | Coordinate Geometry
Concept | Sub-concept	Geometry|Coordinate Geometry (Plotting points in the plane)
Competency	Formulate
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. (0, –9)
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21M10S0702
Grade & Chapter Name	Grade 10 | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Distance Formula)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 6 units
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21M10S0703
Grade & Chapter Name	Grade | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Plotting points in the plane)
Competency	Interpret & Evaluate
Item Type	Closed Constructed Response
Full Credit (Full Score)	Accept all the answers in which players are not equidistant from each other. • Side midfielder and full back • Side midfielder and centre midfielder • Left centre back and left side back
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21M10S0704
Grade & Chapter Name	Grade | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Plotting points in the plane)
Competency	Interpret & Evaluate
Item Type	Constructive Response
Full Credit (Full Score)	Right centre back and right side back
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21M10S0705
Grade & Chapter Name	Grade | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Finding the area formed by joining points)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 09 square units
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21M10S0706
Grade & Chapter Name	Grade | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Distance Formula)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. 510 units
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21M10S0707
Grade & Chapter Name	Grade | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Finding the area formed by joining points)
Competency	Employ
Item Type	Open Constructed Response
Full Credit (Full Score)	(2.5)2 π or equivalent, with or without word square units • (2.5)2π • 19.63 square units
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21M10S0708
Grade & Chapter Name	Grade | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Plotting point in the plane)
Competency	Interpret & Evaluate
Item Type	Closed Constructed Response
Full Credit (Full Score)	Yes, with valid justification. • Yes, the point lies within the goal post.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21M10S0709
Grade & Chapter Name	Grade | Coordinate Geometry
Concept | Sub-concept	Geometry|Coordinate Geometry (Distance Formula)
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. (0, 4)
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21M10S0710
Grade & Chapter Name	Grade 10 | Coordinate Geometry
Concept | Sub-concept	Geometry | Coordinate Geometry (Finding the area formed by joining points)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. 40.5
No Credit (No Score)	Any other response or missing response