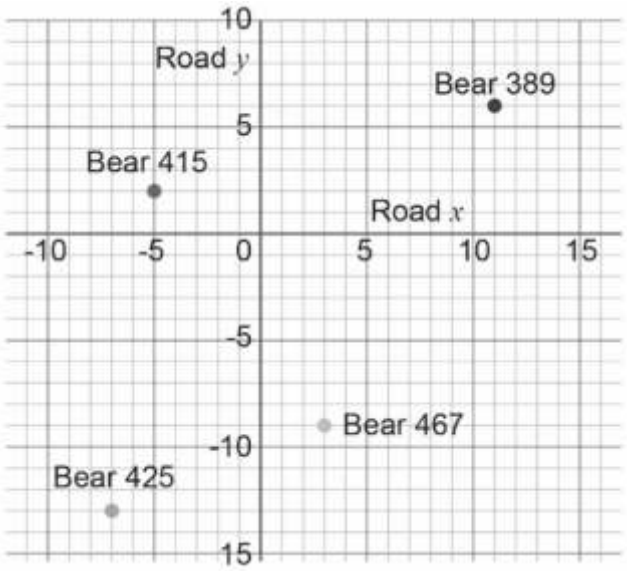
Curriculum Aligned Competency Based Test Items
Mathematics
Class 9 – Chapter 3
Coordinate Geometry

A forest ranger keeps track of bears in his area. He plotted their location on a graph. The origin represents the ranger's control room's location. To access and maintain equipment, Road *x* and Road *y* have been laid and paved inside the forest. They pass through the control room.



One unit on the graph paper represents 1 km.

SAS21M09S0301

1 Which bear is nearest to a paved road?

A. Bear 389
B. Bear 415
C. Bear 425
D. Bear 467

SAS21M09S0302

2 Bear 467 has been injured. The forest rescue team starts from the control room and decides to use the paved road as much as possible. Which road should they take?

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SAS21M09S0303

3 How far is Bear 425 from Road x?

_____

_____

SAS21M09S0304

4 A tiger is at (11, 4). How far from it is the nearest bear?

A. 2 km
B. 4 km
C. 5 km
D. 7 km

SAS21M09S0305

5 In the forest, rain shelters are at an interval of 2 km along paved roads. A forest ranger is travelling on Road x. He crosses a rain shelter located at (3, 0).
What is likely to be the location of the next shelter?

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SAS21M09S0306

6 The control room receives a message about trespassers located at (–9, –8). The trespassers were seen moving towards Road x on foot. The ranger immediately dispatches a team of guards in a jeep towards them. The guards encounter the trespassers before crossing Road x.
Which of the following is most likely to be the location of the encounter?

A. (–9, –14)
B. (–9, –5)
C. (–9, 4)
D. (9, 5)

SAS21M09C0407

7 Ravi planted a red maple tree sapling. The height of the sapling is 0.25 m. The average growth rate of the height of a red maple tree is 0.27 m per year.
The average life of a red maple tree is 80–100 years. Ravi estimated that his tree will grow up to 27 m.
What is the likely reason behind his estimation?

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_____

SAS21M09C0408

8 Which of the following equations represents the height (h) of the red maple tree after 't' years of planting?

A. $h=0.25+0.27$
B. $h=0.25t+0.27$
C. $h=0.25+0.27t$
D. $h=0.25+0.27t$

SAS21M09C0409

9 Which of the following is true for the line with equation: $1.x+0.y-4=0$?

A. The distance of the line from the x-axis is 1.
B. The distance of the line from the Y-axis is 4.
C. The distance of the line from the Y-axis is –1.
D. The distance of the line from the x-axis changes from 1 to –4.

SAS21M09C0410

10 The equation of a line is $ax+by+c=0$.
What conditions ensure that the distance of the line from an axis is constant?

A. $c = 0$ and $a, b \neq 0$
B. $c < 0$ and $a, b \neq 0$
C. $c, b \neq 0$ and $a = 1$
D. $c, b \neq 0$ and $a = 0$

Answers

Item Number	
Question Code	SAS21M09S0301
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. Bear 415
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21M09S0302
Grade & Chapter Name	Grade 9 | 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)	Writes Road *y* OR *y*
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21M09S0303
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Employ
Item Type	Closed Constructed Response
Full Credit (Full Score)	Writes 13 km OR 13
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21M09S0304
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 2 km
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21M09S0305
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Employ
Item Type	Closed Constructed Response
Full Credit (Full Score)	Gives a point which is at a distance of 2 units from (3, 0) (5, 0) (1, 0)
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21M09S0306
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Formulate
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. (–9, –5)
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21M09S0307
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Employ
Item Type	Open Constructed Response
Full Credit (Full Score)	Writes coordinates which are at a distance of 1 km from either of the jeeps including decimal values (2, –9) (3, –10)
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21M09S0308
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Formulate
Item Type	Closed Constructed Response
Full Credit (Full Score)	(– 7, – 9)
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21M09S0309
Grade & Chapter Name	Grade 9 | Coordinate Geometry
Concept | Sub-concept	Geometry/Coordinate Geometry (Plotting Points in the plane)
Competency	Employ
Item Type	Closed Constructed Response
Full Credit (Full Score)	Writes four coordinates that are at equal distance from the control room and paved roads including decimal values For example: {5, 5), (–5, 5), (–5, –5), (5, –5) {2.5, 2.5), (–2.5, 2.5), (–2.5, –2.5), (2.5, –2.5)
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21M09S0310
Grade & Chapter Name	Grade 9 | 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)	$y = x$ and $x = y$
No Credit (No Score)	Any other response or missing response