Curriculum Aligned Competency Based Test Items
Mathematics
Class 9 – Chapter 5
Introduction to Euclid's Geometry

SAS21M09G0501

1 Highways 20A and 56C run parallel to each other for 20 km in a state.
Which of the following statements is most likely to be true regarding them?

A. Both highways are of the same length.
B. There can be no link road between them.
C. The highways make an angle 90° with each other.
D. The distance between the two highways remains almost the same in the state.

Karan marks his city on the map as point A.

SAS21M09G0502

2 Savita says, 'A dot is dimensionless, so your city is also dimensionless.' Why is Savita wrong? Justify your answer.

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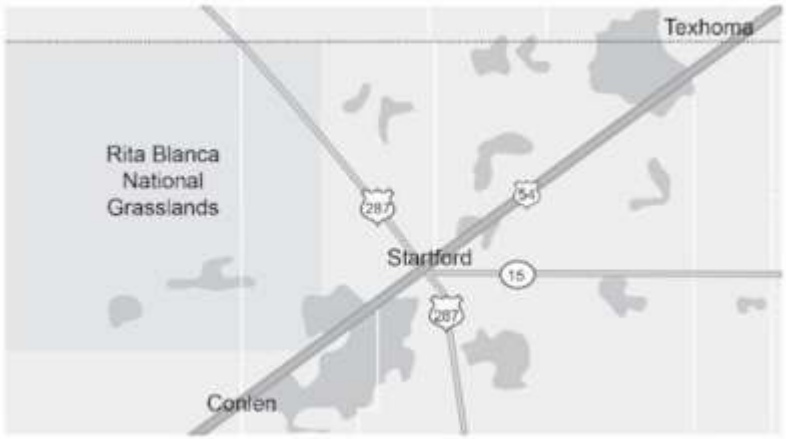
SAS21M09G0503

3 Which of the following is not true?

A. A line has one dimension.
B. A plane has two dimensions.
C. A circle can be drawn with any radius and at any point.
D. Two distinct lines can pass through a point in the same direction.

The map shows three cities Conlen ©, Stratford (S), and Texhoma (T) on a straight highway.



SAS21M09G0504

4 Which of the following is true for the length of the highway between them?

A. The length of the highway between C and S is equal to the length of the highway between S and T.
B. The length of the highway between C and S is three-fourth of the length of the highway between S and T.
C. The length of the highway between S and T is the sum of the lengths of the highway between CT and CS.
D. The length of the highway between C and T is the sum of the lengths of the highway between CS and ST.

SAS21M09G0505

5 A number Y is greater than a number X and another number $Z < 0$.
Which of the following relations can be true for a unique value of Z?

A. $X \times Z = Y \times Z$
B. $X \div Z = Y \div Z$
C. $X - Z = Y$
D. $X + Z = Y$

SAS21M09G0506

6 The area of a triangle is equal to the area of a rectangle.
The area of the rectangle is equal to the area of a parallelogram.
What is the relation between the area of the triangle and the area of the parallelogram?

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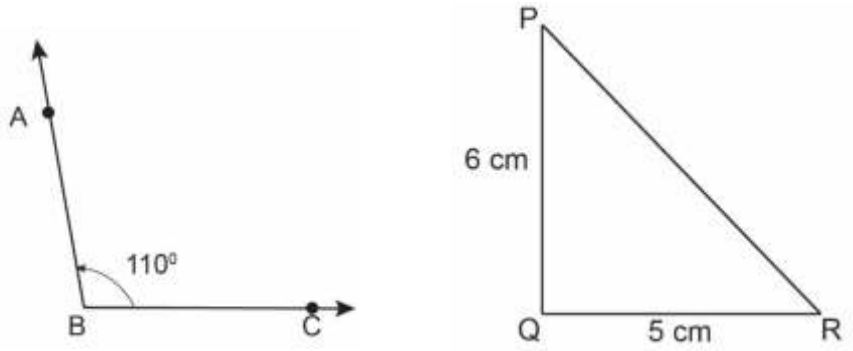
Raghvan claims that the magnitude of the angle ABC is greater than the magnitude of the area of the right triangle PQR.



SAS21M09G0507

7 Is his claim correct? Why?

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SAS21M09G0508

8 Two lines intersect at a point P.
Which of the following is true for the distance between the two lines as they travel beyond point P?

A. The distance becomes constant.
B. The distance increases continuously.
C. The distance decreases continuously.
D. The distance increases and decreases depending upon the intersection point.

SAS21M09G0509

9 Balan says, 'The measure of all right angles cannot be equal as their arms can be of different lengths.' Why is Balan's statement not true?

A. The measure of an angle depends upon its orientation.
B. The measure of an angle depends upon the instrument used to measure it.
C. The measure of an angle depends on the length of its angle arms.
D. The measure of an angle depends upon the rotation of one arm on another.

SAS21M09G0510

10 TAB is a straight line. C is the mid-point of AB. D is the mid-point of AC.
Which of the following shows the relation between the line segments?

A. $AD = \frac{1}{2} AB$
B. $AD = \frac{1}{2} CB$
C. $AD = 2AC$
D. $AD = 2DC$

Answers

Item Number	
Question Code	SAS21M09G0501
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. The distance between the two highways remains almost the same in the state.
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21M09G0502
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Interpret & Evaluate
Item Type	Closed Constructed Response
Full Credit (Full Score)	Answer demonstrates understanding of geometrical axioms and their relation with real-world. • A dot in the map is for representational purpose. • Dot is used only to show the location of the city, not its area.
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21M09G0503
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. Two distinct lines can pass through a point in the same direction.
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21M09G0504
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. The length of the highway between C and T is the sum of the lengths of the highway between CS and ST.
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21M09G0505
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. X – Z = Y
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21M09G0506
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Formulate
Item Type	Closed Constructed Response
Full Credit (Full Score)	Explanation states equality in the area of the triangle and the parallelogram. • Both have equal area. • The area of the triangle is equal to the area of the parallelogram.
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21M09G0507
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Employ
Item Type	Closed Constructed Response
Full Credit (Full Score)	No, with an explanation involving reasoning about magnitudes. No, the measure of an angle cannot be compared to the area of a triangle.
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21M09G0508
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Formulate
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. The distance increases continuously.
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21M09G0509
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	D. The measure of an angle depends upon the rotation of one arm with respect to the other.
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21M09G0510
Grade & Chapter Name	Grade 9 | Introduction to Euclid's Geometry
Concept | Sub-concept	Geometry | Postulates and Axioms
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. $AD = \frac{1}{10} CB$
No Credit (No Score)	Any other response or missing response