test

Subject: Mathematics
Class: 10

Total Marks: 100
Duration: 60 minutes

INSTRUCTIONS:

1. All questions are compulsory.
2. Read all questions carefully before answering.
3. Write your answers clearly and legibly.
4. For multiple choice questions, choose the best answer.
5. For fill in the blanks, write the complete word or phrase.
6. For drawing questions, use a pencil and draw clearly.
7. For matching questions, draw arrows to connect the pairs.
8. Manage your time effectively.

Q1. What is the value of < ‡ ’’ &÷VæFVB Fò Gpo decimal places?

Choose the best answer:

A) 3.14
B) 3.16
C) 3.12
D) 3.10

[1 marks]
[REMEMBER]

Q2. A quadrilateral with opposite sides parallel is called a _____.

Fill in the blanks with appropriate words:

[1 marks]
[REMEMBER]

Q3. What is the name of a triangle with all three sides equal?

Answer in one word:

[1 marks]
[REMEMBER]

Q4. The square root of a negative number is a real number.

A) True
B) False

[1 marks]
[REMEMBER]

Q5. Which of the following are examples of rational numbers?

[1 marks]
[REMEMBER]

Q6. Match the following terms with their definitions:

Match the following:

1. Radius !’ _____
2. Diameter !’ _____
3. Circumference !’ _____

[1 marks]
[REMEMBER]

Q7. Draw a right-angled triangle.

Drawing Instructions:

Draw a triangle with one angle equal to 90 degrees.

Space for drawing:

[1 marks]
[REMEMBER]

Q8. Mark the hypotenuse in the given right-angled triangle.

Marking Instructions:

Mark the longest side of the right-angled triangle.

[1 marks]
[REMEMBER]

Q9. What is the formula for the area of a rectangle?

[1 marks]
[REMEMBER]

Q10. Define a prime number.

[1 marks]
[REMEMBER]

Q11. Explain the difference between a line segment and a line.

[2 marks]
[UNDERSTAND]

Q12. Describe what a variable represents in an algebraic expression.

[2 marks]
[UNDERSTAND]

Q13. Explain how to find the perimeter of a square.

[2 marks]
[UNDERSTAND]

Q14. Explain what the associative property of addition means.

[2 marks]
[UNDERSTAND]

Q15. Explain the difference between a scalene triangle and an isosceles triangle.

[2 marks]
[UNDERSTAND]

Q16. What is the formula for calculating simple interest? Define each term in the formula.

[2 marks]
[UNDERSTAND]

Q17. Describe the relationship between the radius and diameter of a circle.

[2 marks]
[UNDERSTAND]

Q18. Explain what it means for two lines to be perpendicular.

[2 marks]
[UNDERSTAND]

Q19. Explain how to determine if a number is divisible by 3.

[2 marks]
[UNDERSTAND]

Q20. Explain what a histogram is and how it is used.

[2 marks]
[UNDERSTAND]

Q21. A rectangular garden is 8 meters long and 5 meters wide. What is its area?

[3 marks]
[APPLY]

Q22. Solve for x: $2x + 5 = 11$

[3 marks]
[APPLY]

Q23. A train travels at a speed of 60 km/h. How far will it travel in 2.5 hours?

[3 marks]
[APPLY]

Q24. Find the perimeter of a triangle with sides of length 7 cm, 9 cm, and 11 cm.

[3 marks]
[APPLY]

Q25. If a shirt costs $20 and there is a 10% discount, what is the discounted price?

[3 marks]
[APPLY]

Q26. A ladder is leaning against a wall. The base of the ladder is 3 meters away from the wall, and the ladder reaches a height of 4 meters on the wall. How long is the ladder?

[3 marks]
[APPLY]

Q27. Calculate the area of a circle with a radius of 5 cm. (Use < Ò 2ã B•

[3 marks]
[APPLY]

Q28. If the ratio of boys to girls in a class is 2:3, and there are 12 boys, how many girls are there?

[3 marks]
[APPLY]

Q29. Simplify the expression: 3(x + 2) - x

[3 marks]
[APPLY]

Q30. Convert 45 degrees to radians. (Use < Ò 2ã B•

[3 marks]
[APPLY]

Q31. Compare and contrast the properties of a square and a rhombus.

[5 marks]
[ANALYZE]

Q32. Explain how the formula for the area of a triangle relates to the formula for the area of a parallelogram.

[5 marks]
[ANALYZE]

Q33. Analyze the steps needed to solve a linear equation and explain why each step is necessary to isolate the variable.

[5 marks]
[ANALYZE]

Q34. Consider the equation y = 2x + 1. Explain how changing the '2' and the '1' would affect the graph of the line.

[5 marks]
[ANALYZE]

Q35. Evaluate the advantages and disadvantages of using a bar graph versus a pie chart to represent data.

[5 marks]
[EVALUATE]

Q36. A student claims that multiplying two fractions always results in a fraction smaller than the original fractions. Is this always true? Explain your reasoning and provide examples.

[5 marks]
[EVALUATE]

Q37. You are tasked with designing a new park that includes a circular pond and a rectangular flower bed. Describe your design, including dimensions, and explain how you would calculate the total area occupied by these two features. Include reasons for your design choices.

[5 marks]
[CREATE]

Q38. Describe a real-world scenario where you would use the concept of ratio and proportion. Provide a specific example and explain how you would apply the concepts to solve a problem within that scenario.

[5 marks]
[APPLY]