

MODEL ENTRANCE TEST PAPER

BRITISH SECTION SUBJECT: MATHEMATICS

Grade: 9

TOTAL MARKS: 25

SECTION – A

I. Choose the correct answers:

[3 Marks]

- Which of the following is equal to $x^2 + 8x - 9$?
A. $(x + 9)(x - 1)$ B. $(x + 1)(x + 9)$
C. $(x + 9)(x - 9)$ D. $(x + 8)(x + 1)$
- Which of the following is equal to $(x^3)^{-2}$?
A. x^{-5} B. x^5 C. x^{-6} D. x^6
- If $x^2 = 81$ then $x =$
A. -9 B. 81 C. ± 9 D. -81
- Volume of a cylinder is given by
A. $V = \frac{4}{3}\pi r^3$ B. $V = l \times b \times h$ C. $V = \pi r^2 h$ D. $V = 2\pi r$
- The circumference of a circle of radius 10cm is (use $\pi = 3$.)
A. 18.8cm B. 31.4cm C. 62.8cm D. 314cm
- The sum of two numbers is 13 and the sum of their squares is 97. Find the numbers.
A. 9, 3 B. 9, 4 C. $-9, -3$ D. 8, 5
- Surface Area of a sphere is given by
A. $A = \frac{4}{3}\pi r^3$ B. $A = \pi r l$ C. $A = 4\pi r^2$ D. $A = \frac{4}{3}\pi r^2$
- $m^4 \times m =$
A. m^4 B. m^5 C. m^0 D. m^3
- If $x^2 - 81 = 0$ then $x =$
A. ± 81 B. ± 9

C. +9

D. -9

10. The value of $8^{\frac{1}{3}}$

A. $2^{\frac{1}{3}}$

B. 2

C. 8

D. 1

11. When written in standard form 0.0049 is

A. 4.9×10^{-3}

B. 4.9×10^3

C. 49×10^{-3}

D. 0.49×10^4

12. If $A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}$ $B = \begin{pmatrix} 4 & 5 \\ 6 & 7 \end{pmatrix}$ then $A + B =$

A. $\begin{pmatrix} 5 & 7 \\ 9 & 11 \end{pmatrix}$

B. $\begin{pmatrix} 7 & 5 \\ 9 & 11 \end{pmatrix}$

C. $\begin{pmatrix} 14 & 25 \\ 36 & 47 \end{pmatrix}$

D. $\begin{pmatrix} 4 & 10 \\ 18 & 28 \end{pmatrix}$

II. Fill in the blanks:

[6 Marks]

1. Radius = $\frac{\quad}{2}$

2. $4y^0 = \dots\dots\dots$

3. Probability of Impossibility = $\dots\dots\dots$

4. If $2^x = 8$ then $x = \dots\dots\dots$

5. When a number is multiplied by one the product is the number $\dots\dots\dots$

6. An equation which can be written in the form of $ax^2 + bx = 0$ is called a $\dots\dots\dots$ equation.

7. To divide powers of the same base subtract the $\dots\dots\dots$

8. Area of a triangle = $\dots\dots\dots$

9. Area of a sector = $\dots\dots\dots$

10. Area of a circle with radius 11 cm = $\dots\dots\dots$

11. Area of a trapezium = $\dots\dots\dots$

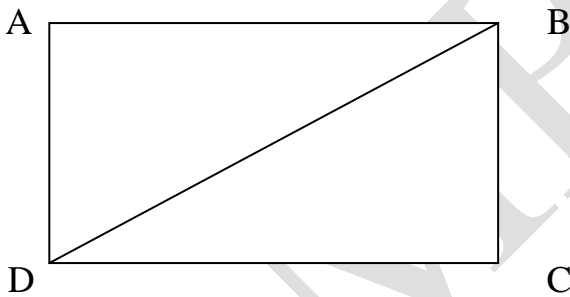
12. Triangles which are exactly the same shape and size are said to be $\dots\dots\dots$

SECTION – B
(16 Marks)

1. Find the circumference of a bicycle wheel of diameter 66cm.
2. Use the formula to solve the equation $x^2 + 6x + 3 = 0$.
3. Complete the table so that $y \propto x$.

x	2		7	8	
y	20	40			95

4. Construct a triangle ABC in which $AB = 8\text{cm}$; $BC = 5\text{cm}$; $AC = 6\text{cm}$.
5. ABCD is a rectangle. BD is a diagonal prove that $\triangle ABC$ and $\triangle CDA$ are congruent.



6. Factorise $x^2 - 13x + 36 = 0$.
7. Simplify $\frac{3}{4a} - \frac{2}{3a}$.
8. Solve $\frac{x}{6} + \frac{x}{3} = 3$.