# MATHEMATICS MOCK TEST

**Class: VIII | Set: 1**

**Time: 1 Hour 30 Minutes | Written Marks: 35 | Viva: 5 | Total: 40 Marks**

**NAME:** _____ **ROLL NO:** _____

## SECTION A

**(1 Mark Each)**

1. If $x$ and $y$ vary directly and $x = 3$ when $y = 12$, find the value of $y$ when $x = 5$.
2. State the Euler's formula for a polyhedron.
3. Write the formula for the area of a trapezium.
4. If 15 men can build a wall in 48 hours, how many men will be required to do the same work in 30 hours?
5. Find the volume of a cube whose edge is $7$ cm.

## SECTION B

**(2 Marks Each)**

6. A machine in a soft drink factory fills 840 bottles in six hours. How many bottles will it fill in five hours?
7. $A$ can finish a piece of work in 12 days while $B$ can do it in 15 days. If both work together, how many days will they take to complete the work?
8. The area of a trapezium is $34$ cm$^2$ and the length of one of the parallel sides is $10$ cm and its height is $4$ cm. Find the length of the other parallel side.
9. Find the height of a cuboid whose base area is $180$ cm$^2$ and volume is $900$ cm$^3$.
10. Verify Euler's formula for a square pyramid (Faces = 5, Vertices = 5, Edges = 8).

## SECTION C

**(3 Marks Each)**

11. A car takes 2 hours to reach a destination by travelling at the speed of $60$ km/h. How long will it take when the car travels at the speed of $80$ km/h?
12. Two persons could fit new windows in a house in 3 days.
    (i) One of the persons fell ill before the work started. How long would the job take now?
    (ii) How many persons would be needed to fit the windows in one day?

**13.** Find the area of a rhombus whose side is $5$ cm and whose altitude is $4.8$ cm. If one of its diagonals is $8$ cm long, find the length of the other diagonal.

**14.** A rectangular paper of width $14$ cm is rolled along its width and a cylinder of radius $20$ cm is formed. Find the volume of the cylinder. (Take $\pi = \frac{22}{7}$)

## SECTION D

**(4 Marks Each - Case Study)**

**Case Study 1: The Construction Project**
A construction company observed that 15 men can build a wall $120$ m long in 12 days.

(i) How many men are required to build a wall of the same length in 9 days? (2 Marks)

(ii) If the number of men is reduced to 10, how many days will it take to build the same wall? (2 Marks)

**Case Study 2: Storage Solutions**
A cold storage company uses cuboidal containers to store medicines. Each container has dimensions $2$ m $\times$ $1.5$ m $\times$ $1$ m.

(i) Find the total surface area of one container in square metres. (2 Marks)

(ii) If the company has a total space of $60$ m$^3$, how many such containers can be accommodated in that space? (2 Marks)

## VIVA VOCE

**(5 Marks)**

- **Proportion:** Explain the difference between direct and inverse proportion with an example.
- **Work:** If person A is twice as efficient as person B, who will take more time to complete a task?
- **Euler's Formula:** What are F, V, and E representing in the formula?
- **Mensuration:** What is the relation between $1$ cm$^3$ and $1$ mL?
- **Solids:** Define a "Regular Polyhedron".