Tender Heart High School, Sector 33B, Chd.

Class : IX
Subject : Mathematics

Date : 3-02-2025
Teacher : Ms. Reena

Revision for Unit Test
Ch-5 Simultaneous Linear Equations
Ch-19 Volume and surface area of solids

Ques 1 Solve the following pairs of equations (any method)

(i) $\frac{5}{x-1} + \frac{1}{y-2} = 2$; $\frac{6}{x-1} - \frac{3}{y-2} = 1$ [Ans $x=4$, $y=5$]

(ii) $99x + 101y = 499xy$; $101x + 99y = 501xy$

[Ans $x=0, y=0$; $x=\frac{1}{2}, y=\frac{1}{3}$]

(iii) $\frac{3}{x+y} + \frac{2}{x-y} = 3$; $\frac{2}{x+y} + \frac{3}{x-y} = \frac{11}{3}$

[Ans $x=2, y=1$]

(iv) $\frac{3x-7}{2} - \frac{2y-8}{3} = -1$,

$\frac{5-x}{3} - \frac{3-2y}{7} = 1$ [Ans $x=-1$, $y=-2$]

(v) $2x + 3y = 11$; $2x - 4y = -24$.

Hence, find the value of 'm' for which $y = mx + 3$

[Ans. $x=-2, y=5$; $m=-1$]

Ques 2: The result of dividing a number of two digits by the number with the digits reversed is $\frac{5}{6}$. If the difference of digits is 1, find the number. [Ans. 45]

Ques 3: If the numerator of a certain fraction is increased by 2 and the denominator by 1, the fraction becomes equal to $\frac{5}{8}$ and if the numerator and denominator are each diminished by 1, the fraction becomes equal to $\frac{1}{2}$; find the fraction. [Ans. $\frac{8}{15}$]

Ques 4: A boat takes 2 hours to go 40 km down the stream and it returns in 4 hours. Find the speed of the boat in still water and the speed of the stream. [Ans 15 km/hr, 5 km/hr]

Ques 5: The volume of a cuboid is 3600 cm^3 and its height is 12cm. The cross-section is a rectangle whose length and breadth are in the ratio 4:3. Find the perimeter of the cross-section. [Ans 70cm]

Ques 6: The area of a playground is 4800 m^2. Find the cost of covering it with gravel 1cm deep, if the gravel costs ₹ 260 per cubic metre. [Ans ₹ 12480]

Ques 7: Three cubes whose edges are x cm, 8cm, 10cm respectively are melted and recast into a single cube of edge 12cm. Find x [Ans 6]

Ques 8: The lateral surface area of a cuboid is 224 cm^2. Its height is 7cm and the base is a square. Find

(i) a side of the square

(ii) the volume of the cuboid.

Ques 9: A cuboidal block of metal has dimensions 36cm by 32cm by 0·25cm. It is melted and recast into cubes with an edge of 4cm.

(i) How many such cubes can be made?

(ii) What is the cost of silver coating the surfaces of the cubes at the rate of ₹ 1.25 per square centimetre? [Ans 450, 54000]