

$$\boxed{\text{विभाज} = \text{D}}$$

* भाज्य/ मुख्य राशिकी करो:-

$$\boxed{\text{अकवडा} = 2}$$

(1) खोस खोस संबधननुं दनकल $x^3 + 9x^2 + 23x + 15$ हो, ती तमां सक्य परिभाडा खोयो

→ खोकी दानवाला यदोमा सहगुडाकीनी सख्याली = $1 + 23 = 24$
खोकी दानवाला यदोमा सहगुडाकीनी सख्याली = $9 + 15 = 24$

$$x + 1 = 0$$

$$\boxed{x = -1}$$

	x^3	x^2	x	0
	1	9	23	15
	+	+	+	+
-1	0	-1	-8	-15
	1	8	15	0

$$\begin{aligned} P(x) &= (x+1)(x^2+8x+15) \\ &= (x+1)(x^2+5x+3x+15) \\ &= (x+1)(x(x+5)+3(x+5)) \\ &= (x+1)(x+5)(x+3) \end{aligned}$$

$$l = (x+1)$$

$$b = (x+5)$$

$$h = (x+3)$$

प्रश्न = 2

अगर $a+b+c = 5$ और $ab+bc+ca = 10$ है, तो साबित करें कि, $a^3+b^3+c^3-3abc = -25$

$$\longrightarrow a^3+b^3+c^3-3abc = (a+b+c)(a^2+b^2+c^2-ab-bc-ca)$$

$$\longrightarrow \begin{aligned} a+b+c &= 5 \\ ab+bc+ca &= 10 \end{aligned}$$

$$\begin{aligned} \longrightarrow (a+b+c)^2 &= a^2+b^2+c^2+2(ab+bc+ca) \\ (5)^2 &= a^2+b^2+c^2+2(10) \\ 25 &= a^2+b^2+c^2+20 \\ 25-20 &= a^2+b^2+c^2 \\ 5 &= a^2+b^2+c^2 \end{aligned}$$

$$\boxed{a^2+b^2+c^2 = 5}$$

$$\begin{aligned} \longrightarrow a^3+b^3+c^3-3abc &= (a+b+c)(a^2+b^2+c^2-ab-bc-ca) \\ &= (5)(5-10) \\ &= 5 \times (-5) \end{aligned}$$

$$\boxed{a^3+b^3+c^3-3abc = -25}$$

प्रश्न-3 व्यक्तिकर्या करुनु.

$$(1) 2\sqrt{2}a^3 + 8b^3 - 27c^3 + 18\sqrt{2}abc$$

$$\text{निरुक्तकः } a^3 + b^3 + c^3 - 3abc = (a+b+c)(a^2 + b^2 + c^2 - ab - bc - ac)$$

$$\begin{aligned} \rightarrow & (\sqrt{2}a)^3 + (2b)^3 + (-3c)^3 - 3(\sqrt{2}a)(2b)(-3c) \\ & = (\sqrt{2}a + 2b - 3c) \left[(\sqrt{2}a)^2 + (2b)^2 + (-3c)^2 \right. \\ & \quad \left. - (\sqrt{2}a)(2b) - (2b)(-3c) - (-3c)(\sqrt{2}a) \right] \end{aligned}$$

$$\rightarrow = (\sqrt{2}a + 2b - 3c)(2a^2 + 4b^2 + 9c^2 - 2\sqrt{2}ab + 6bc + 3\sqrt{2}ac)$$

$$(2) 8p^3 + \frac{12p^2}{5} + \frac{6}{25p} + \frac{1}{125}$$

$$\rightarrow 8p^3 + \frac{1}{125} + \frac{12p^2}{5} + \frac{6}{25p}$$

$$\text{निरुक्तकः } (a+b)^3 = a^3 + b^3 + 3a^2b + 3ab^2$$

$$\rightarrow = (2p)^3 + \left(\frac{1}{5}\right)^3 + 3(2p)^2\left(\frac{1}{5}\right) + 3(2p)\left(\frac{1}{5}\right)^2$$

$$= \left(2p + \frac{1}{5}\right)^3$$

प्रश्न-4 व्यक्तिकर्या करुनु.

$$1. (-x + 2y - 3z)^2$$

$$= (-x)^2 + (2y)^2 + (-3z)^2 + 2(-x)(2y) + 2(2y)(-3z) + 2(-x)(-3z)$$

$$= x^2 + 4y^2 + 9z^2 - 4xy - 12yz + 6xz$$

$$(2) \left(\frac{x}{2} + 2y\right) \left(\frac{x^2}{4} - xy + 4y^2\right)$$

$$\rightarrow = \frac{x}{2} \left(\frac{x^2}{4} - xy + 4y^2\right) + 2y \left(\frac{x^2}{4} - xy + 4y^2\right)$$

$$= \frac{x^3}{8} - \frac{x^2y}{2} + \frac{4xy^2}{2} + \frac{2x^2y}{4} - 2xy^2 + 8y^3$$

$$= \frac{x^3}{8} - \cancel{\frac{x^2y}{2}} + \cancel{2xy^2} + \cancel{\frac{x^2y}{2}} - \cancel{2xy^2} + 8y^3$$

$$= \frac{x^3}{8} + 8y^3$$

પ્રશ્ન=5

નીચે સંબંધોચ્ચનાં ક્ષેત્રફળ દર્શાવેલ છે. તેમની સંભવિત સંભાઈ અને પહોળાઈ શોધો :-

→ (1) ક્ષેત્રફળ :- $25v^2 - 35a + 12$
 $= 25v^2 - 25a + 12$
 $= 25v^2 - 20a - 15a + 12$
 $= 5a(5v - 4) - 3(5a - 4)$
 $= (5a - 4)(5v - 3)$

→ સંભાઈ = $(5v - 4)$
 પહોળાઈ = $(5v - 3)$

→ (2) ક્ષેત્રફળ :- $35y^2 + 13y - 12$
 $= 35y^2 + 13y - 12$
 $= 35y^2 + 28y - 15y - 12$
 $= 7y(5y + 4) - 3(5y + 4)$
 $= (5y + 4)(7y - 3)$

→ પહોળાઈ = $(5y + 4)$
 સંભાઈ = $(7y - 3)$