quadratic equation

→ हि **धात समी**करण

$$\mathcal{H} = \frac{-b \pm \sqrt{6^2 - 4ac}}{2a}$$

$$\alpha = \frac{-b + b^2 - 4ac}{2a}$$

$$(i)$$
 $\alpha + \beta = \frac{-b}{a}$

(ii)
$$\alpha \cdot \beta = \frac{c}{\alpha}$$

$$32e^2 - 720 + 9 = 0$$

$$0 + \beta = \frac{-b}{a} = \frac{+7}{3} = \frac{7}{3}$$

$$(1)$$
 $d \cdot \beta = \frac{2}{a} = \frac{9}{3} = 3$

$$2x^2-6x+2=0$$

 $x+\beta=2=3$
 $x+\beta=2=1$

$$(1) x^2 + \beta^2 = (x+\beta)^2 - 2x + \beta$$

$$= 3^2 - 2x = 9 - 2 = 7$$

(ii)
$$\alpha^3 + \beta^3 = (\alpha + \beta)^3 - 3\alpha \cdot \beta(\alpha + \beta)$$

 $3^3 - 3x \cdot 1x \cdot 3$
 $27 - 9 = 18$

$$d^{2}+\beta^{2}=(\alpha+\beta)^{2}-2\alpha\beta$$

$$=4^{2}-2\chi5$$

$$=16-10=6$$

1)
$$\frac{\alpha}{\beta} + \frac{\beta}{\alpha} = \frac{\alpha^2 + \beta^2}{\alpha \cdot \beta} = \frac{6}{5}$$
 Ans.

$$\alpha^{3} + \beta^{3} = (\alpha + \beta)^{3} - 3\alpha \cdot \beta(\alpha + \beta)$$

$$= 4^{3} - 3x + 5x + 4$$

$$= 64 - 60 = 4$$

(I)
$$\frac{\chi^2}{\beta} + \frac{\beta^2}{\alpha} = \frac{\chi^3 + \beta^3}{\alpha + \beta} = \frac{4}{5} \frac{Ans}{5}$$

aze2+bze+c=0

विवेचन । विविक्तर (३)

$$\mathcal{D} = b^2 - 4ac$$

- () यदि D=0 होतो दोनो मूल समान तथा वास्तविब होते।
- (ii) यदि D>0 हो तो सूल वास्तविद तथा असमान होने।
- Ш यदि २८० हो तो मूल काकपनिद्य होगे।

$$32e^2 - 52e - 11 = 0$$

 $ax^2 + bx + c = 0$

$$a=3$$

$$b=-5$$

$$c=-11$$

$$\mathfrak{D} = (-5)^2 - 4 \times 3 \times -11$$

$$D = 157$$

D70 -> मूलवास्तिविद्धत्था असमान होते। Roots Real and unequal

$$4x^2-6x+42=0$$

 $ax^2+bx+c=0$

$$D = b^2 - 4ac$$

$$D = 36 - 39$$

(D70)

$$ax^2+bx+c$$

$$(ii)$$
 min^m $\rightarrow 2e^2 \rightarrow +Ve$

$$\Theta = \frac{-b}{2a}$$

Maxm and minm value



18. Find the minimum value of $4x^2 + 2x + 1$.

$$4x^2 + 2x + 1$$
 का न्यूनतम मान ज्ञात करें।

 $\frac{1}{\min^{m}|\max^{m}=\frac{4ac-b^{2}}{4a}}$

$$= \frac{4 \times 4 \times 1 - 2^{2}}{4 \times 4} = \frac{16 - 4}{4 \times 4} = \frac{19}{16} = \frac{3}{4} + \frac{1}{4} \times (-\frac{1}{4})^{2} + 2 \times (-\frac{1}{4}) + 1$$

(i) अवैदिस् मान वे लिए न्युनतम हो जा?
$$2 = \frac{-b}{2a} = \frac{-2}{2x4} = \frac{-1}{4}$$

$$4x^{2}+2x+1$$
 $4x(-\frac{1}{4})^{2}+2x(-\frac{1}{4})+1$
 $4x(-\frac{1}{4})^{2}+2x(-\frac{1}{4})+1$
 $4x(-\frac{1}{4})^{2}+2x(-\frac{1}{4})+1$
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19. For real number 'x', find the maximum value of $4 - 6x - x^2$.

'x' के वास्तविक मान के लिये, $4-6x-x^2$ का अधिकतम मान

निकालें।

(A) 10

$$-3e^2-63e+4$$

 ax^2+bx+c

$$\alpha = -1$$

 $b = -6$
 $C = 4$

$$\frac{\max_{min} m = 4ac-b^2}{4a} = \frac{4x-1x4-(-6)^2}{4x-1}$$

$$= \frac{-16 - 36}{-4}$$

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$$= \frac{159 = 13}{14}$$

By :- P.K Sir

20. If one root $x^2 - 6kx + 5 = 0$ is 5, find the value of 'K'.

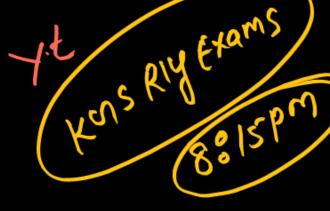


यदि $x^2 - 6kx + 5 = 0$ का एक मूल 5 हो, तो 'K' का मान निकालें।

(A)
$$-\frac{1}{2}$$
 (B) -1

(D) 2





$$30 - 30k = 0$$





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21. If one of the roots of quadratic equation $7x^2 - 50x + K = 0$, is 7, then what is the value of K?

यदि द्विघात समीकरण $7x^2 - 50x + K = 0$ का एक मूल 7 हो, तो

K का मान क्या होगा ?

(A)
$$\frac{50}{7}$$

(B)
$$\sqrt{\frac{7}{50}}$$

$$(C)$$
 7

$$(D)$$
 1

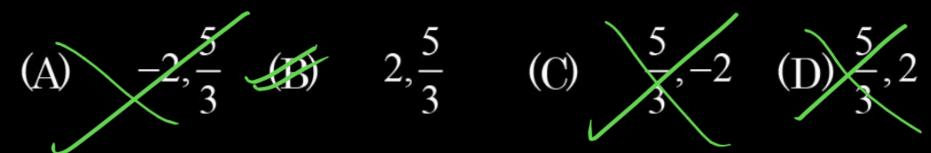
$$7x7^{2} - sox7 + k = 0$$

$$343 - 350 + k = 0$$

 $-7 + k = 0$

22. Find sum and product of the roots of quadratic equation $3x^2$ -6x+5=0?

द्विघात समीकरण $3x^2 - 6x + 5 = 0$ के मूलों का जोड़ तथा गुणनफल ज्ञात करें।



(C)
$$\frac{5}{3}$$
, -2 (D) $\frac{5}{3}$, 2

$$a \cdot b = \frac{c}{a} = \frac{5}{3}$$

