MISSION BANK 2024

MATHS

आरंभ बैच

QUADRATIC EQUATION

PART 1

लग जाओ 2024 के लिए

Day-5

LIVE 08:00 AM

Signification of Inequality

Two variables :- Two variables can be x and y or a and b etc. .

Conditions :-

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation cann’t be established,

असमानता का तात्पर्य

दो चर :- x और y या a और b इत्यादि दो चर हो सकते है |

परिस्थितियां :-

(i) $x > y$

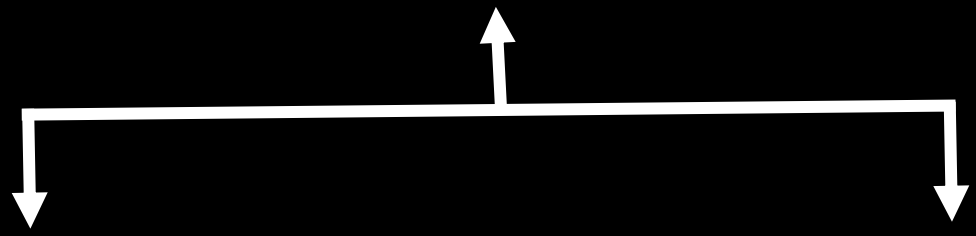
(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ अथवा सम्बन्ध स्थापित नहीं किया जा सकता है ,

Type of Equations



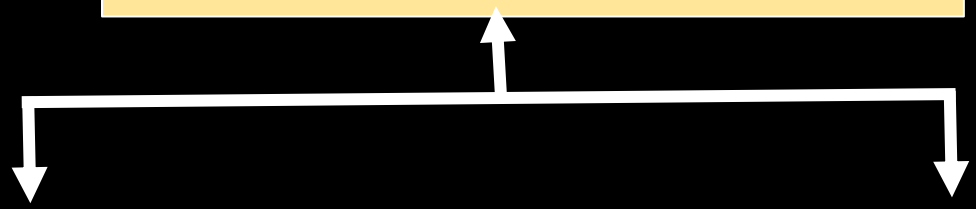
Quadratic Equation

($ax^2 + bx + c = 0$)

Unitary Equation

($ax + by + c = 0$)

समीकरणों के प्रकार



द्विघात समीकरण

$(ax^2 + bx + c = 0)$

ऐकिक समीकरण

$(ax + by + c = 0)$

Change of symbols(In Quadratic Equations)

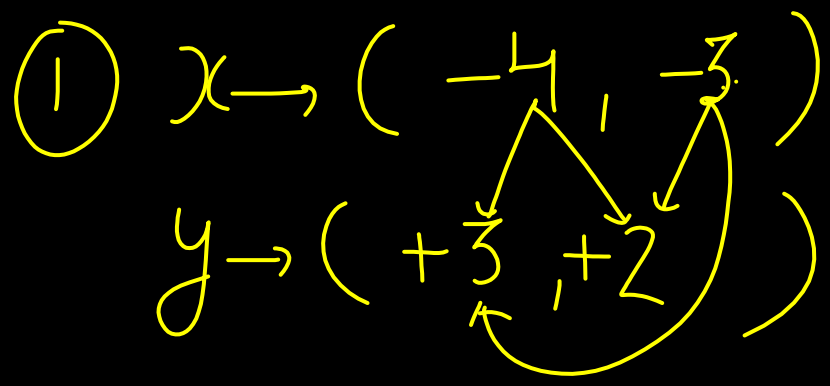
$ax^2 + bx + c = 0$

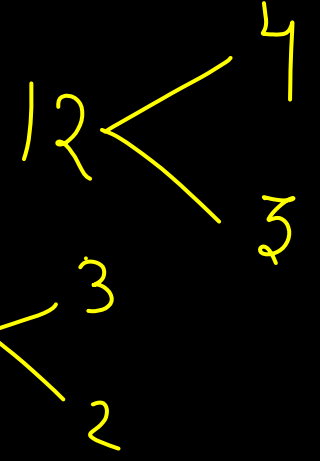
Questions of Quadratic Equations	Their answers
(± , ±)	(- , -)
(- , +)	(± , ±)
(+ , -)	(- , +)
(- , -)	(± , -)

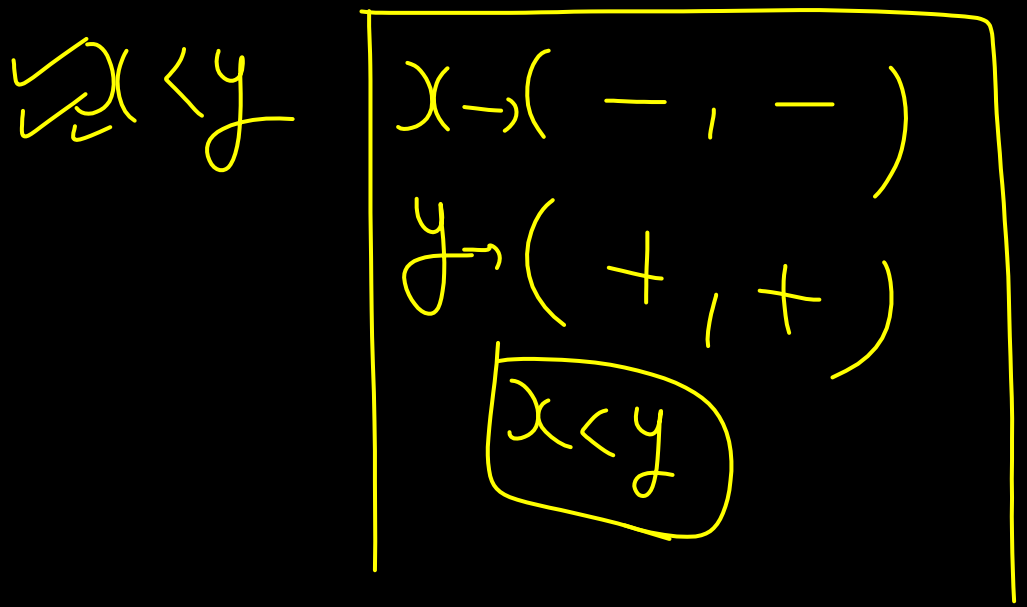
Question 1-

(i) $x^2 + 7x + 12 = 0$

(ii) $y^2 - 5y + 6 = 0$







(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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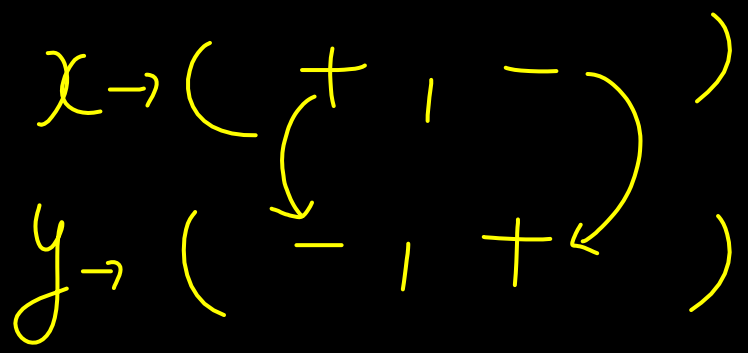
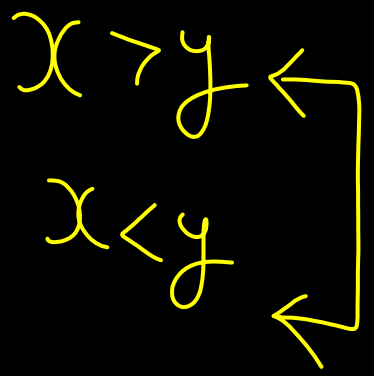
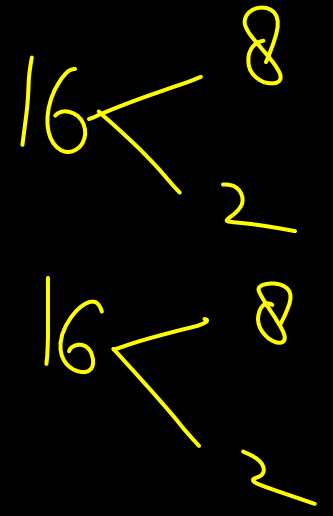




Question 2-

(i) $x^2 - 6x - 16 = 0$

(ii) $y^2 + y - 16 = 0$



(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) x = y or relation can't be established,

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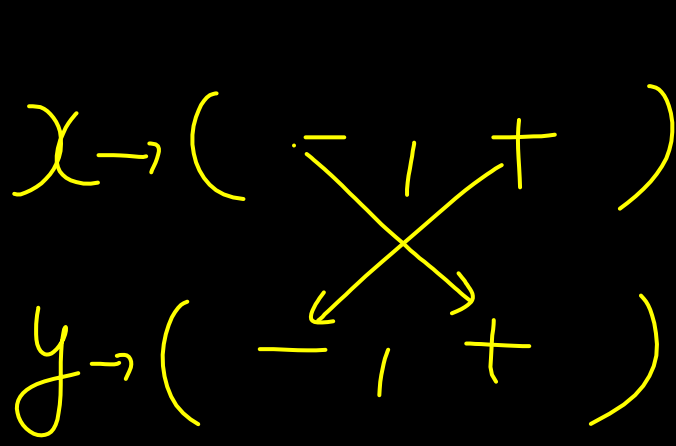

$x < y$
$x > y$

$x \to (-23, +2)$

$y \to (-27, +3)$

Question 3-

(i) $x^2 + 21x - 46 = 0$

(ii) $y^2 + 24y - 81 = 0$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

~~(v)~~ $x = y$ or relation can't be established,

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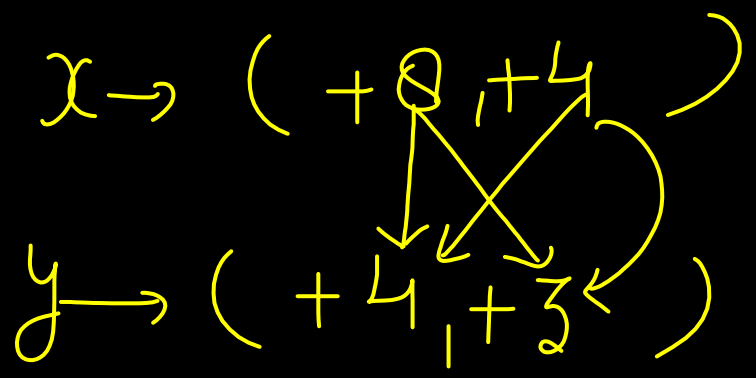
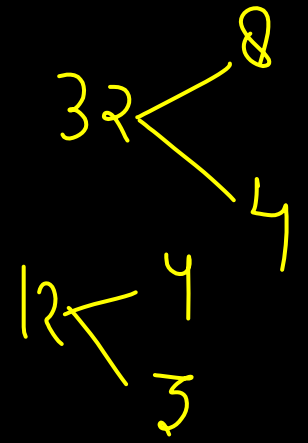


$\left.\begin{matrix} x>y \\ x=y \end{matrix}\right] x \geq y$

Question 4-

(i) $x^2 - 12x + 32 = 0$

(ii) $y^2 - 7y + 12 = 0$



(i) $x > y$

(ii) $x < y$

~~(iii)~~ $x \geq y$

(iv) $x \leq y$

(v) x = y or relation can't be established,

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$x \to \left(\frac{-10}{4}, \frac{-2}{4}\right)$ | $y \to \left(\frac{-24}{6}, \frac{-3}{6}\right)$

$x \to (-2.5, -0.5)$ | $y \to (-4, -0.5)$

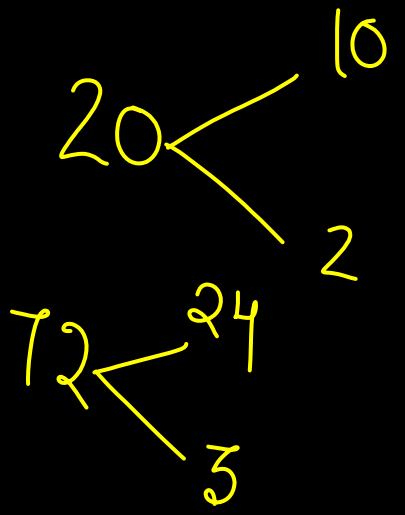
$x > y$

$x < y$

Question 5-

(i) $4x^2 + 12x + 5 = 0$

(ii) $6y^2 + 27y + 12 = 0$



(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

~~(v)~~ x = y or relation can't be established,

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$x \rightarrow (+, +)$

$y \rightarrow (-, -)$

$x > y$

Question 6-

(i) $3x^2 - 16x + 21 = 0$

(ii) $6y^2 + 25y + 21 = 0$

~~(i)~~ $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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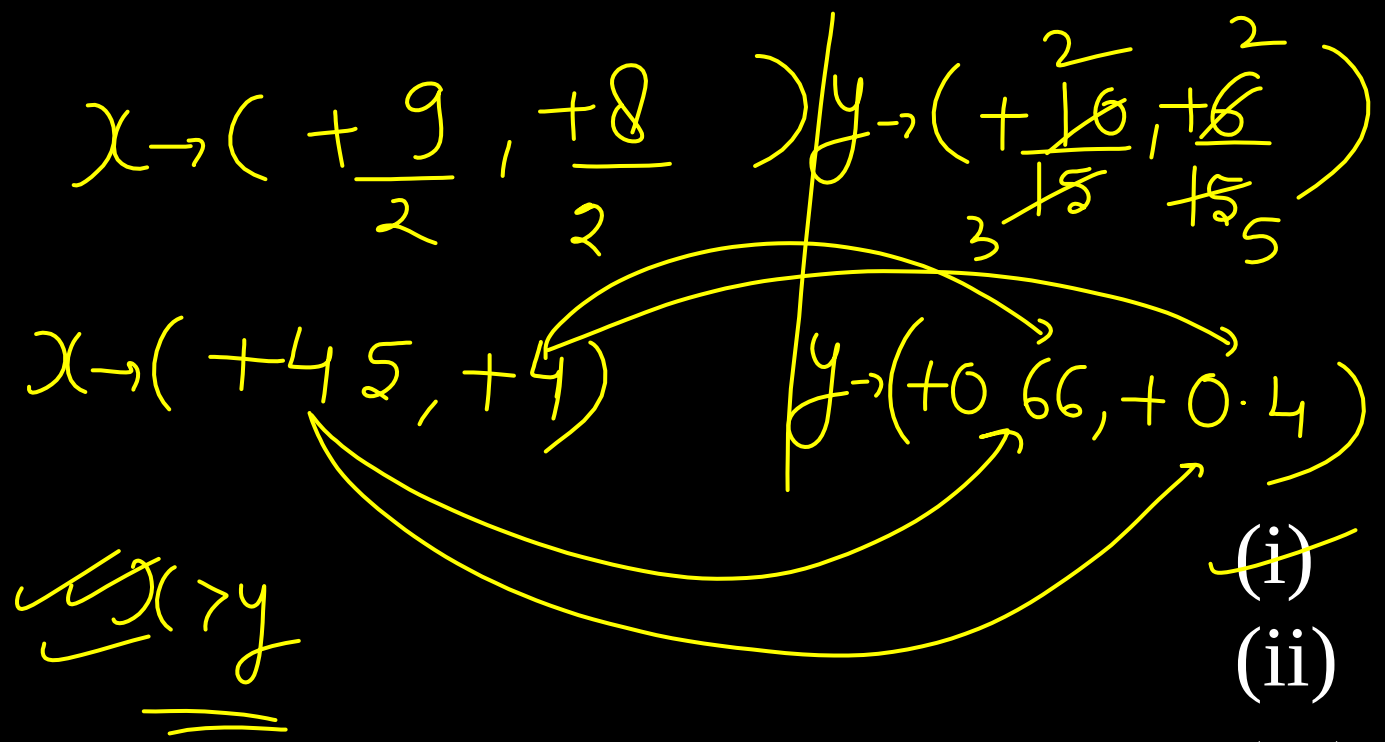
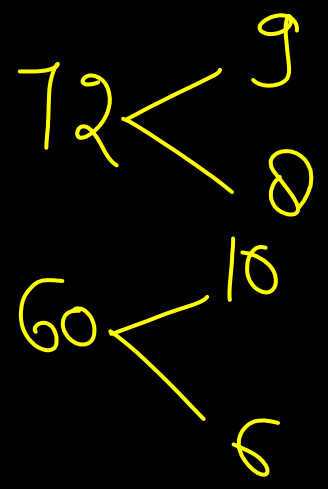


Question 7-

(i) $2x^2 - 17x + 36 = 0$

(ii) $15y^2 - 16y + 4 = 0$



~~(i)~~ $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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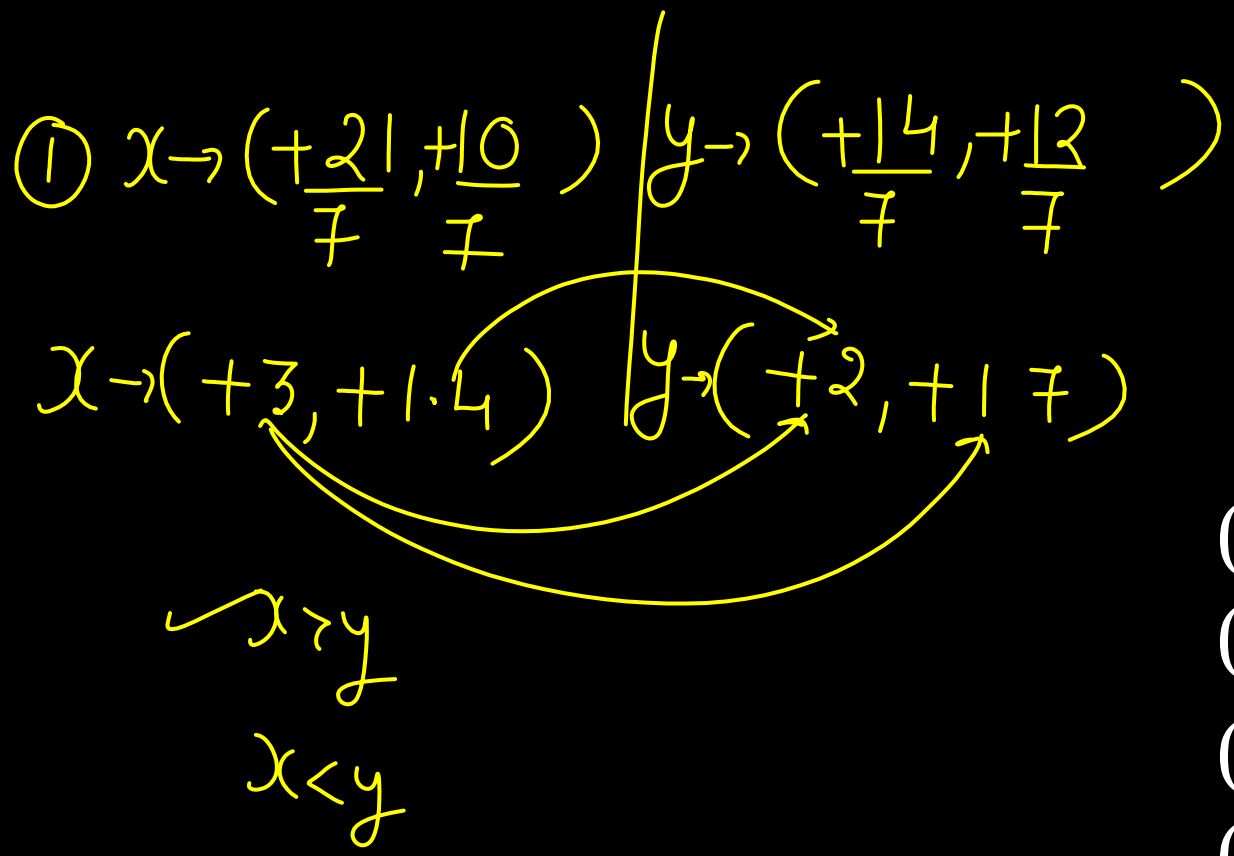
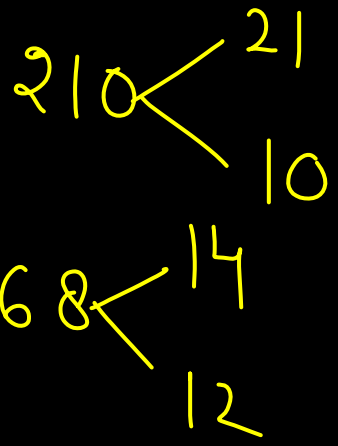


Question 8-

(i) $7x^2 - 31x + 30 = 0$

(ii) $7y^2 - 26y + 24 = 0$



(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

~~(v)~~ x = y or relation can't be established,

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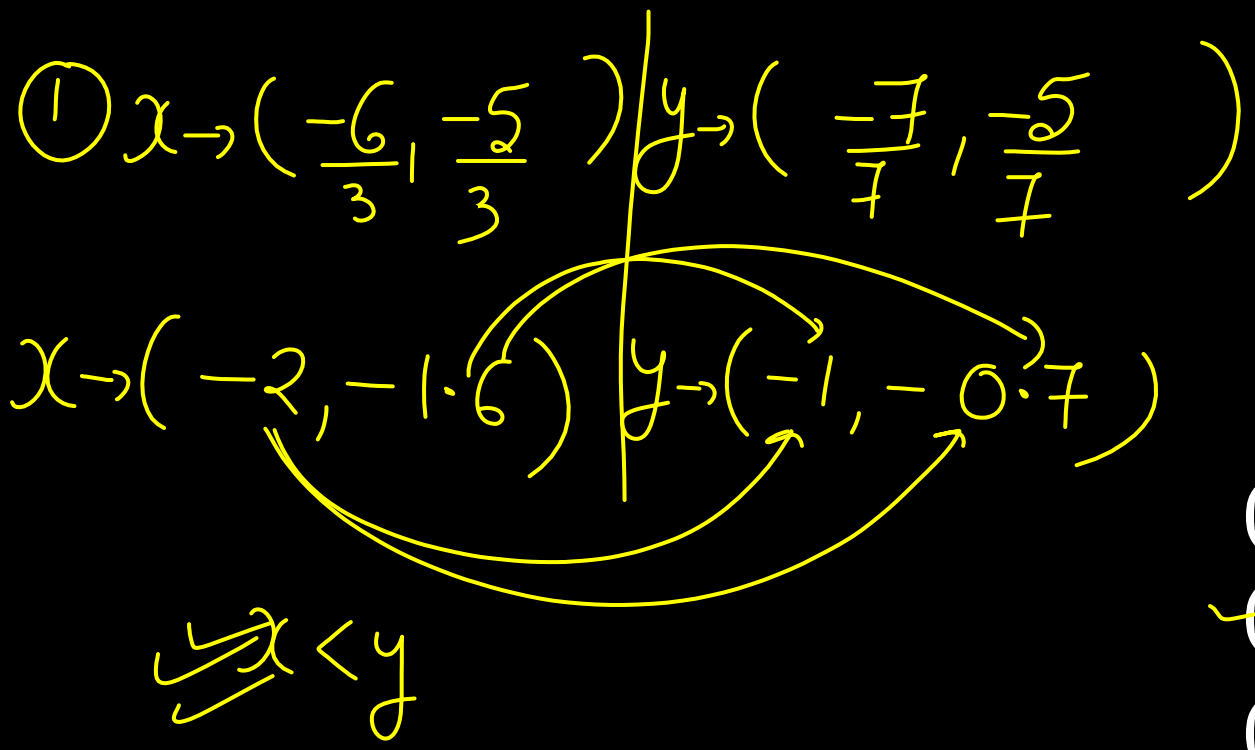
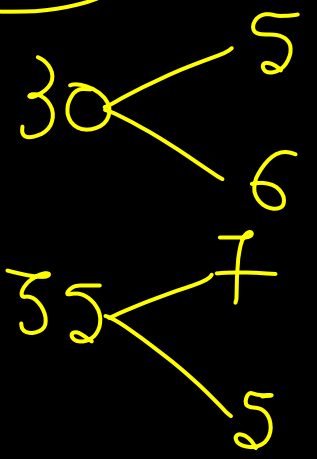


Question 9-

(i) $3x^2 + 11x + 10 = 0$

(ii) $7y^2 + 12y + 5 = 0$



(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) x = y or relation can't be established,

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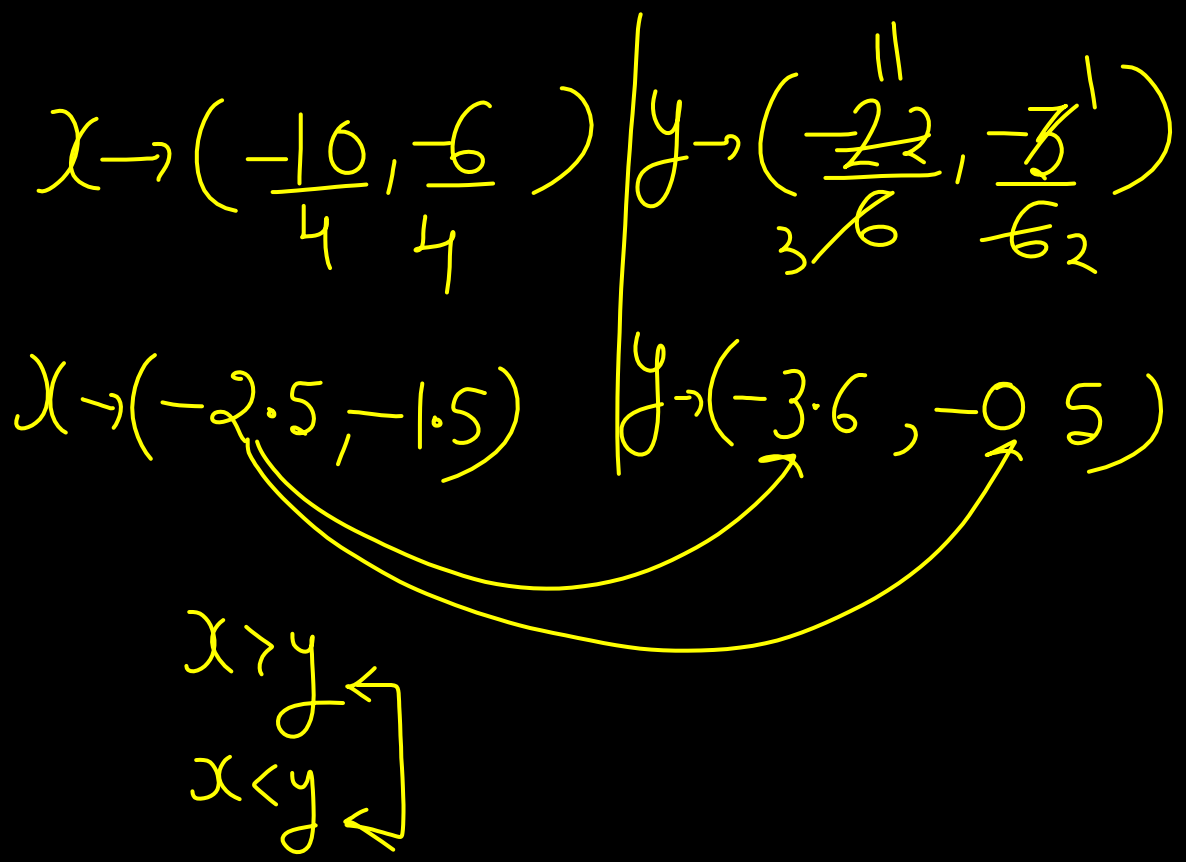
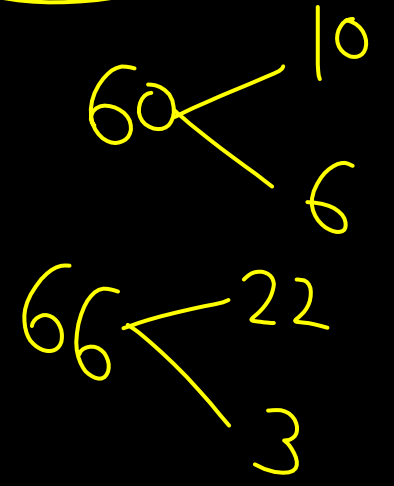


Question 10-

(i) $4x^2 + 16x + 15 = 0$

(ii) $6y^2 + 25y + 11 = 0$



(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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$x \to (+5, +5)$ $y \to (+13, +13)$

$x < y$

Question 11-

(i) $x^2 - 10x + 25 = 0$

(ii) $y^2 - 26y + 169 = 0$

(i) $x > y$

(ii) ~~(ii)~~ $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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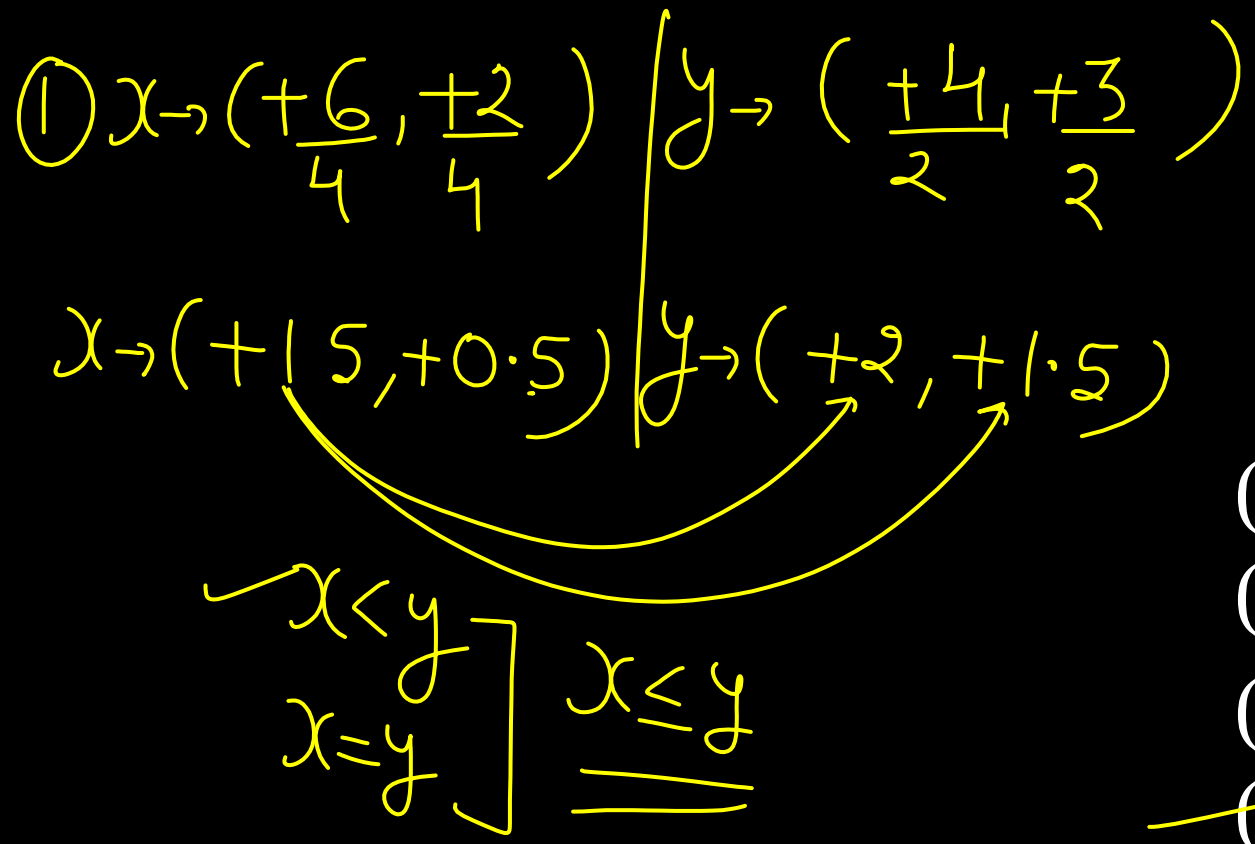
Question 12-

(i) $4x^2 - 8x + 3 = 0$

(ii) $2y^2 - 7y + 6 = 0$



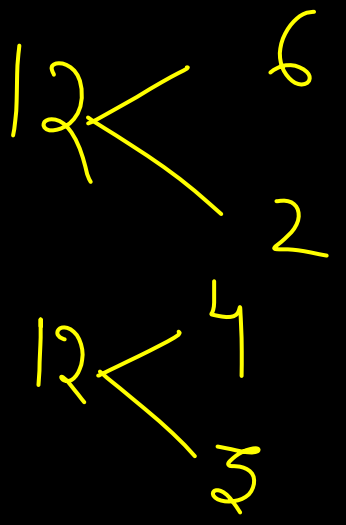
(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,



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Question 13-

(i) $4x^2 + 16x + 15 = 0$

(ii) $6y^2 + 25y + 11 = 0$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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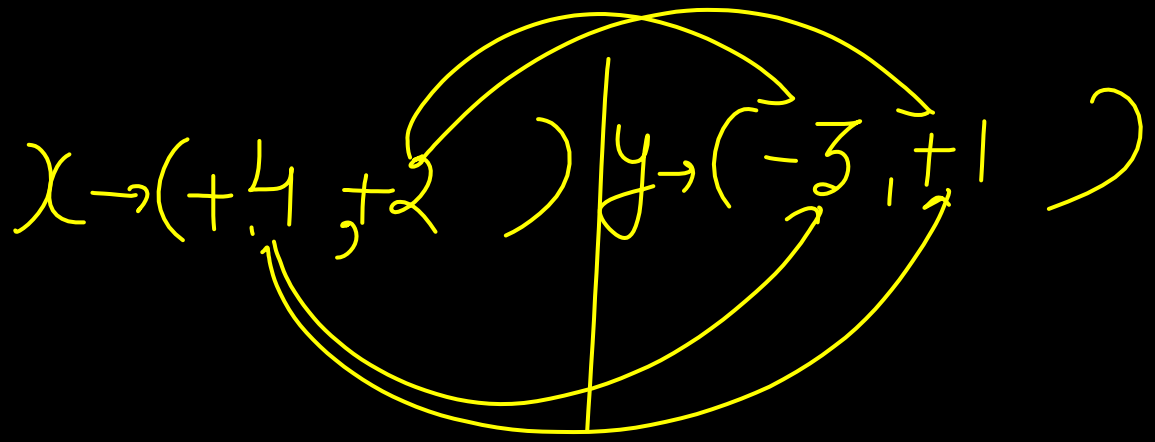


$\therefore x > y$

Question 14-

(i) $x^2 - 6x + 8 = 0$

(ii) $7y^2 + 21y - 28 = 0$

$y^2 + 3y - 4 = 0$

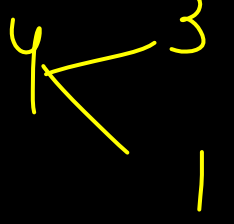
(i) ~~(i)~~ $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,



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Question 15-

(i) $3x + 4y = 18$

(ii) $4x + 3y = 17$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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even power (सम घात)
$(x)^{(2,4,6,\cdots)}$
Answer $(+,-)$

Odd power (विषम घात)
$(x)^{1,3,5,\cdots}$
Answer $(+)$

Question 16-

(i) $x^3 - 371 = 629$

(ii) $y^3 - 543 = 788$

$x^3 = 1000$ | $y^3 = 1331$

$x \to +10$ | $y \to +11$

$x < y$

(i) $x > y$

~~(ii)~~ $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) x = y or relation can't be established,

1
800
543
1331

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e.g. $x^2 = 36$
$x \to (+6, -6)$

① $31x = 248$ | $32y = 224$

$x = 8$ | $y = 7$

$x > y$

Question 17-

(i) $\sqrt{961}x + 1234 = 1482$ (31)

(ii) $\sqrt{1024}y + 1196 = 1420$

~~(i)~~ $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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Question 18-

(i) $x = \mp\sqrt{225}$

(ii) $y = \sqrt{-64}$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) x = y or relation can't be established,

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$3^4 = 81$

① $x \rightarrow (+3, -3)$ $y \rightarrow (+3)$

$x = y$
$x < y$] $x \leq y$

Question 19-

(i) $x^4 = 81$

(ii) $y' = \sqrt{9}$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

~~(iv)~~ $x \leq y$

(v) x = y or relation can't be established,

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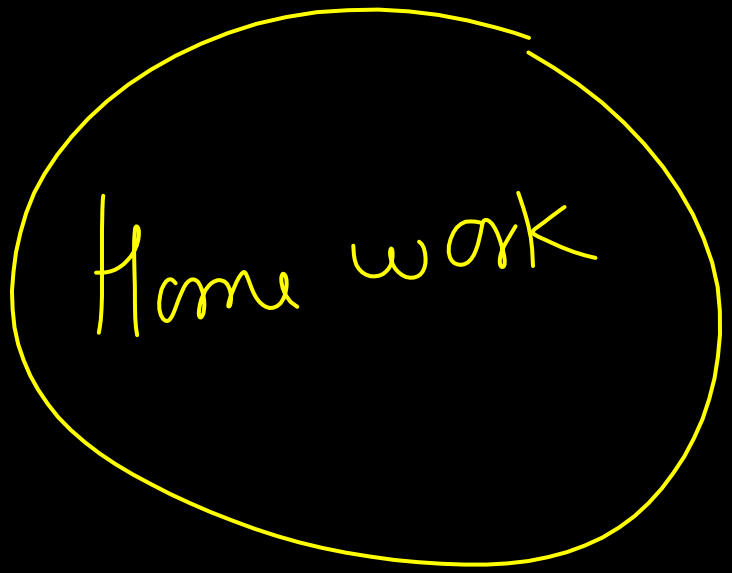

Question 20-

(i) $x^2 + 14x + 48 = 0$

(ii) $y^2 + 11y + 30 = 0$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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Question 21-

(i) $x^2 + 3\sqrt{3x} - 84 = 0$

(ii) $y^2 + 9\sqrt{3x} + 60 = 0$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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Hemu work

Question 22-

(i) $484^{\frac{1}{2}} x^2 - 96 = 256$

(ii) $144^{\frac{1}{2}} y^2 + 343 = 391$

(i) $x > y$

(ii) $x < y$

(iii) $x \geq y$

(iv) $x \leq y$

(v) $x = y$ or relation can't be established,

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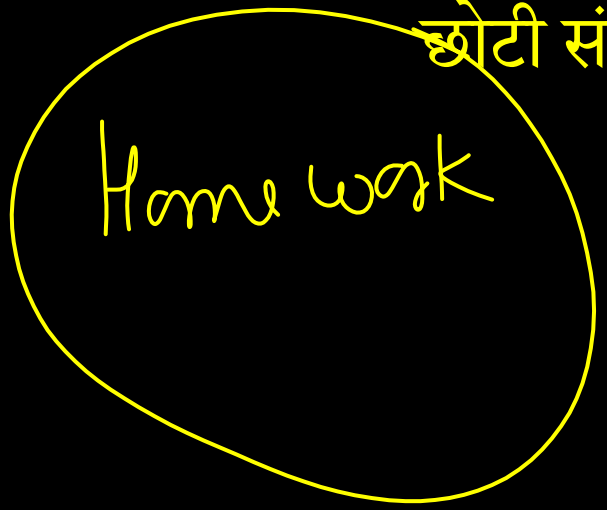
Question 23- The product of two consecutive positive integer is 306. Find the smaller number.

प्रश्न 23- दो क्रमागत धनात्मक पूर्णांकों का गुणनफल 306 है। छोटी संख्या ज्ञात कीजिये



A. 17
B. 18
C. 21
D. 8
E. None of these

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