

Quadratic Equation

JPP 3



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



$$\alpha\beta = \frac{c}{a}$$



$$|\alpha - \beta| = \frac{\sqrt{D}}{|a|}$$



Sameer Chincholikar

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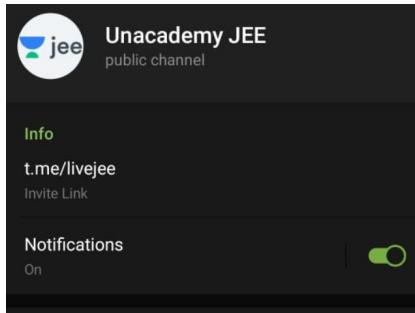
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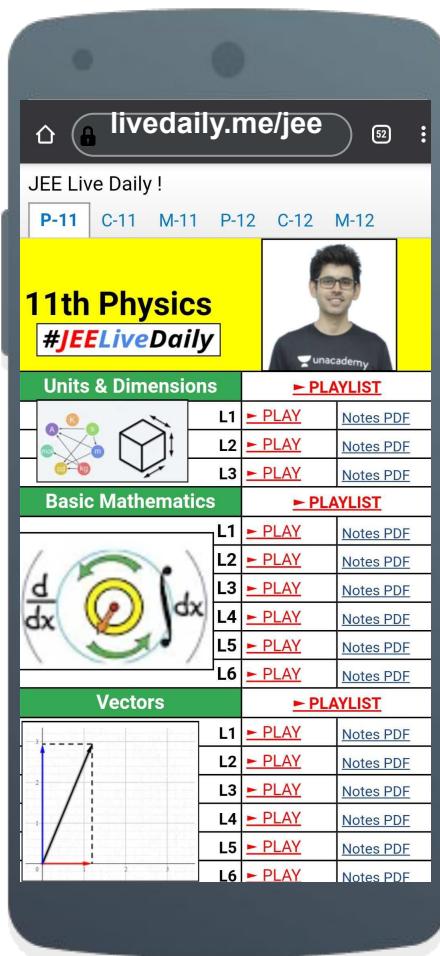
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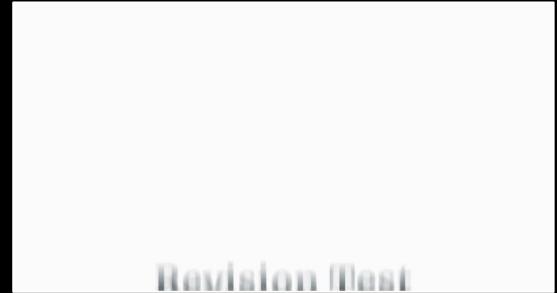
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The collage consists of three panels:

- Top Left:** A screenshot of a physics question about projectile motion. It shows a shell fired from point O at 60 degrees with a speed of 40 m/s, hitting point A. Below is a video feed of a teacher.
- Top Right:** A screenshot of a physics lesson on "Self Inductance". It shows a circular loop with current I flowing clockwise. Text explains that emf is induced because of the change in magnetic flux through the loop. A formula $\epsilon = -L \frac{di}{dt}$ is shown.
- Bottom:** A screenshot of a math quiz. It shows a diagram of a rectangle with vertices labeled P_{ext}, P_{int}, Q_{int}, and Q_{ext}. A handwritten note says $P_{int} = 4$.

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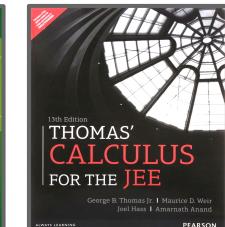
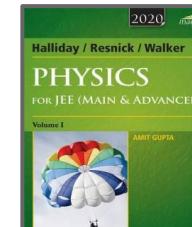
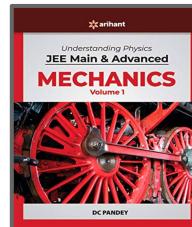
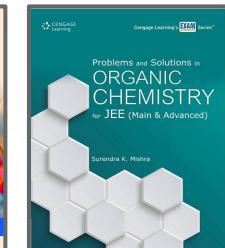
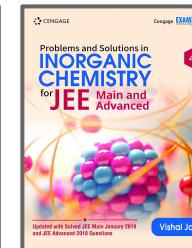
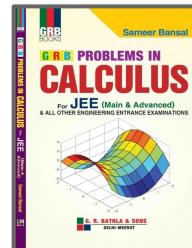
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If x is real, then $\frac{x}{x^2 - 5x + 9}$ must lie in the interval

- A. [1, 7]
- B. [-1/11, 1]
- C. (4, 6)
- D. (3, 5)



If **x is real**, then find the range of $\frac{x^2 - 3x + 4}{x^2 + 3x + 4}$

A. $-\frac{1}{7}$ and 7

B. $\frac{1}{7}$ and 7

2006 M

C. $\frac{1}{3}$ and 3

D. None of these



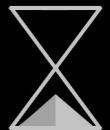
If $-3 < \frac{x^2 + mx + 1}{x^2 + x + 1} < 3$ for all real x , then

- A. $m < -1$
- B. $-1 < m < 6$
- C. $-1 < m < 5$
- D. $m > 6$



If the expression $\frac{px^2 + 3x - 4}{p + 3x - 4x^2}$ ($p + 3x - 4x^2 \neq 0$) takes all real values, then **p lies** in interval

- A. [1, 7]
- B. [-3, -2]
- C. (4, 6)
- D. (3, 5)



Given that, for **all real x**, the expression $\frac{x^2 - 2x + 4}{x^2 + 2x + 4}$ lies **between 1/3**

& 3. The values between which the expression $\frac{9 \cdot 3^{2x} + 6 \cdot 3^x + 4}{9 \cdot 3^{2x} - 6 \cdot 3^x + 4}$ lies are

- A. 0 and 2
- B. -1 and 1
- C. -2 and 0
- D. 1/3 and 3



If $(x^2 - 5x + 4)(y^2 + y + 1) < 2y$ for all $y \in \mathbb{R}$, then

- A. $x \in (3, 4)$
- B. $x \in (2, 4)$
- C. $x \in (2, 3)$
- D. None of these



If $\alpha < \beta$ are the roots of the equation $x^2 + bx + c = 0$, where $c < 0 < b$, then

- A. $0 < \alpha < \beta$
- B. $\alpha < 0 < \beta < |\alpha|$
- C. $\alpha < \beta < 0$
- D. $\alpha < 0 < \alpha < |\beta|$



Both the roots of the equation

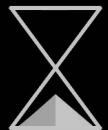
$$(x - b)(x - c) + (x - a)(x - c) + (x - a)(x - b) = 0$$
 are always :

- A. positive
- B. negative
- C. real
- D. None of these



The roots of the equation $x^2 - (m - 3)x + m = 0$ are such that exactly one of them lies in the interval $(1, 2)$. Then

- A. $5 < m < 7$
- B. $m < 10$
- C. $2 < m < 5$
- D. $m > 10$



The **value of k** for which the number 3 lies between the roots of the equation $x^2 + (1 - 2k)x + (k^2 - k - 2) = 0$ is given by :

- A. $2 < k < 5$
- B. $k < 2$
- C. $2 < k < 3$
- D. $k > 5$



If $x^2 + px + 1$ is a factor of $ax^3 + bx + c$, then :

- A. $a^2 + c^2 = -ab$
- B. $a^2 - c^2 = -ab$
- C. $a^2 - c^2 = ab$
- D. None of these



#JEELiveDaily Schedule



11th



Namo Sir | Physics

6:00 - 7:30 PM



Ashwani Sir | Chemistry

7:30 - 9:00 PM



Sameer Sir | Maths

9:00 - 10:30 PM

12th



Jayant Sir | Physics

1:30 - 3:00 PM



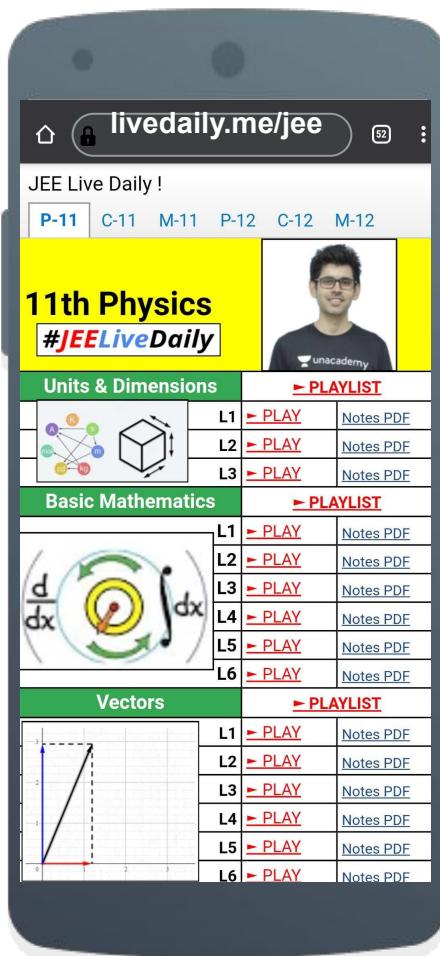
Anupam Sir | Chemistry

3:00 - 4:30 PM



Nishant Sir | Maths

4:30 - 6:00 PM



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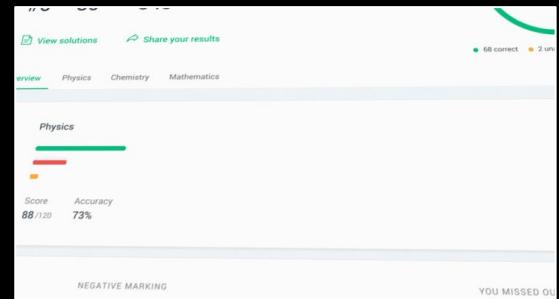
The first screenshot shows a live class interface with a teacher video feed, student names (Brijesh, Sagar, Sonwab), and a question about projectile motion.

The second screenshot shows a physics exercise titled "Self Inductance". It includes a diagram of a circular loop with current I , text explaining self-induced emf, and the formula $e = -L \frac{di}{dt}$.

The third screenshot shows a handwritten note with a diagram of a rectangle and the text $P_{\text{ext}} = 4$.

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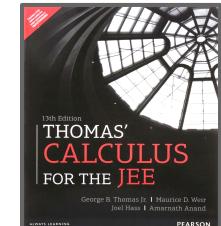
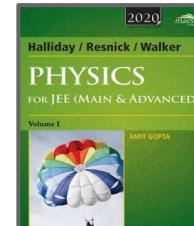
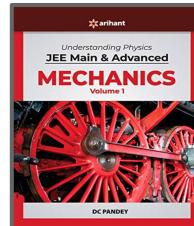
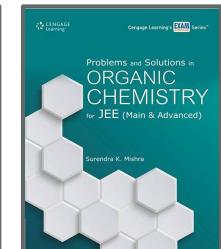
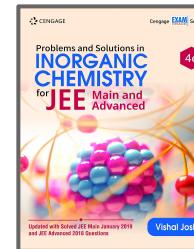
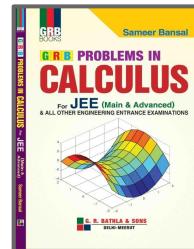
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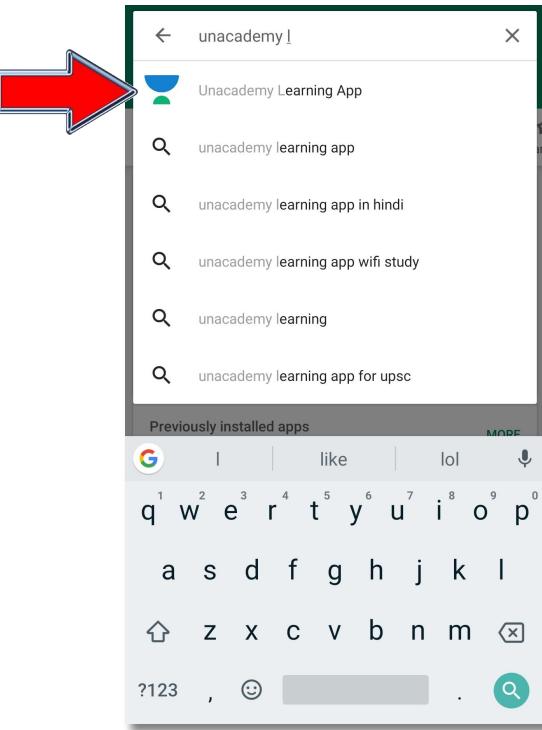


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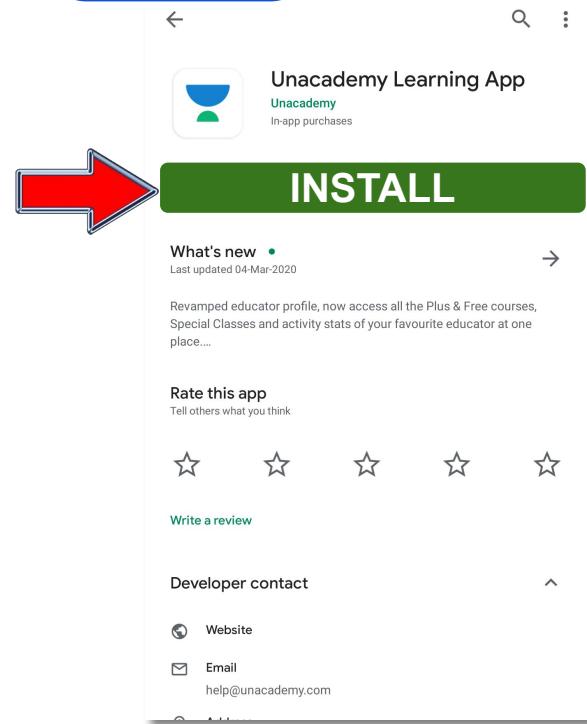


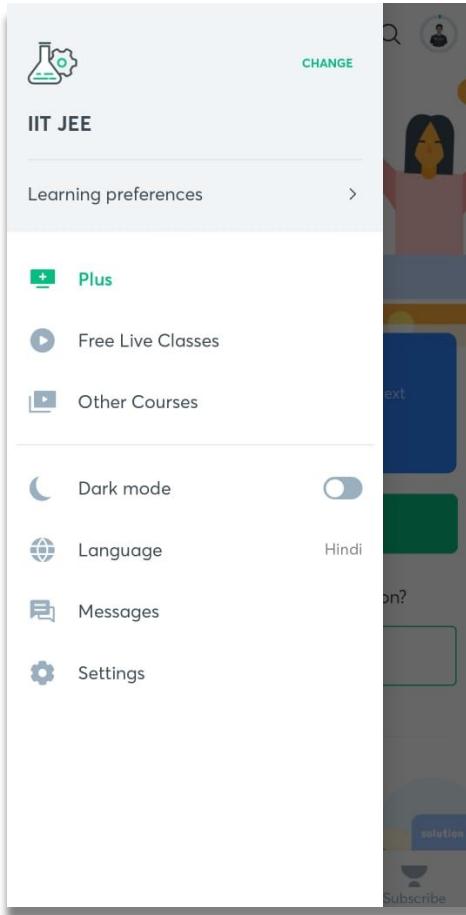
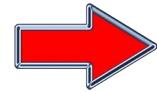
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Starts on **2nd June 2021**

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