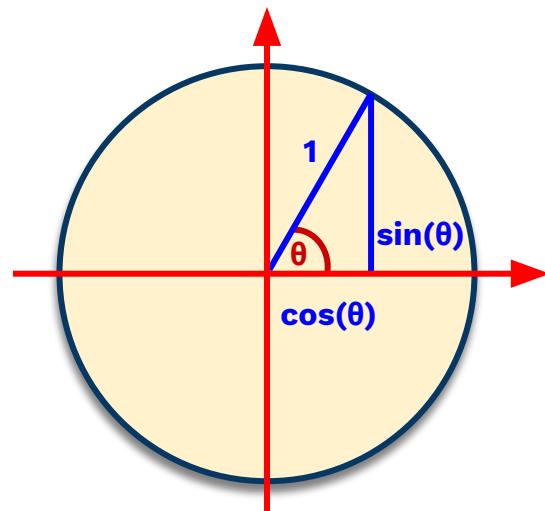


# Trigonometry

JPP

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- ✓ Taught **1 Million+** Students
- ✓ **100+** Aspiring Teachers Mentored



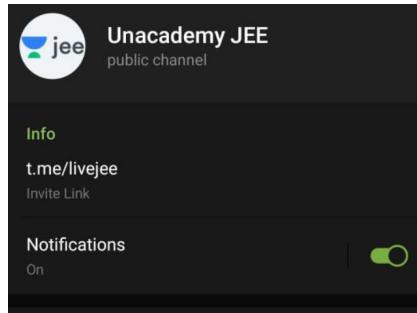
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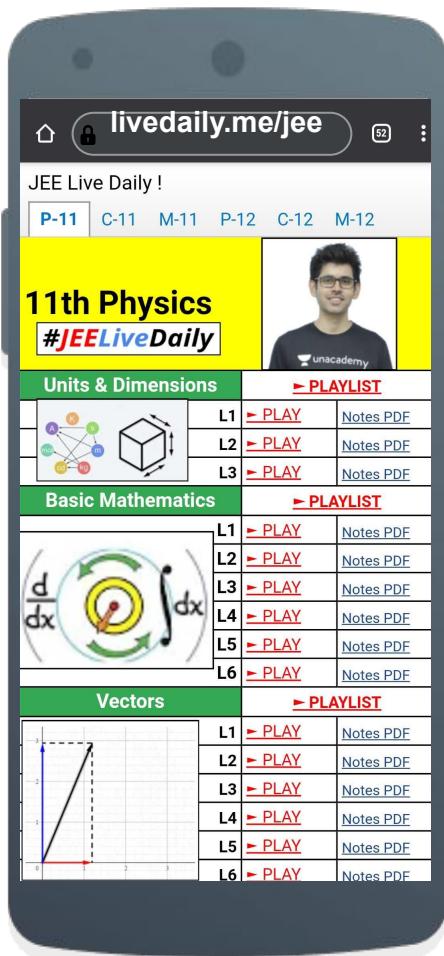
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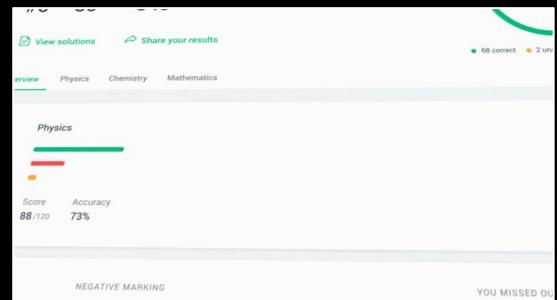
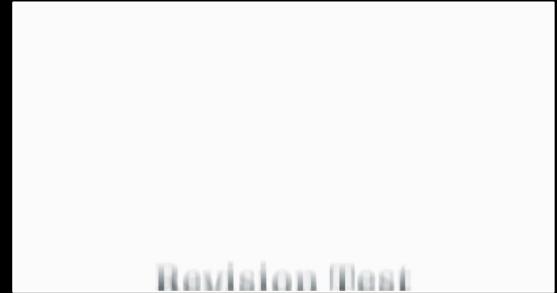
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- + **LIVE Doubt Solving**
- + **LIVE Interaction**



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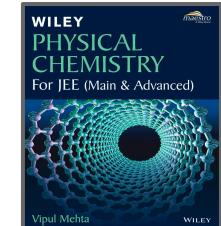
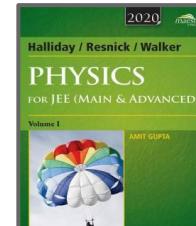
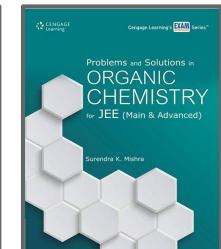
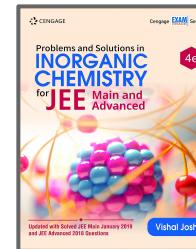
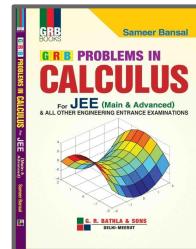
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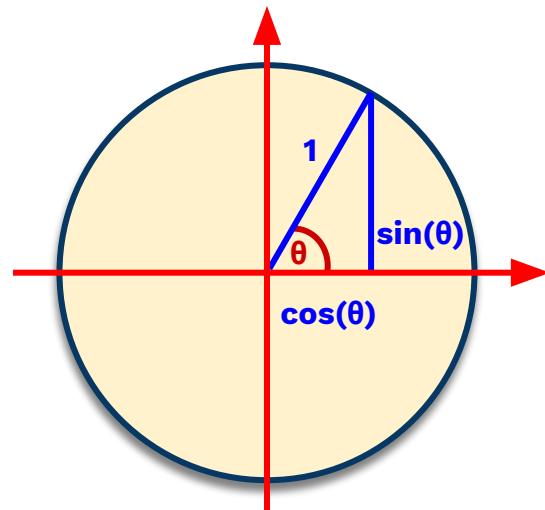
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# Trigonometry

JPP

3



Sameer Chincholikar



The value of expression  $\frac{1}{\cos 290^\circ} + \frac{1}{\sqrt{3}\sin 250^\circ}$  is equal to

A.  $\frac{\sqrt{3}}{4}$

B.  $\frac{4}{\sqrt{3}}$

C.  $\frac{2}{\sqrt{3}}$

D.  $\frac{\sqrt{3}}{2}$



If  $\tan \beta = \frac{n \sin \alpha \cos \alpha}{1 - n \cos^2 \alpha}$  then,  $\tan(\alpha + \beta)$  is equal to

- A.  $(n - 1) \tan \alpha$       B.  $(n + 1) \tan \alpha$       C.  $\frac{1}{n + 1} \tan \alpha$       D.  $\frac{-1}{n - 1} \tan \alpha$



If  $\sin \theta = \frac{3}{5}$ , where  $\frac{\pi}{2} < \theta < \pi$ , then:

**More than one correct**

A.  $\sin 2\theta = \frac{24}{25}$

B.  $\cos 2\theta = \frac{7}{25}$

C.  $\tan 2\theta = -\frac{3}{4}$

D.  $\cos 3\theta = \frac{44}{125}$



If  $f(\theta) = \sin\theta \cos^3 \theta - \cos \theta \sin^3 \theta$ , then:

More than one correct

A.  $f\left(\frac{\pi}{12}\right) = \frac{\sqrt{3}}{8}$

B.  $f\left(\frac{\pi}{8}\right) = \frac{1}{4}$

C.  $f\left(\frac{\pi}{6}\right) = \frac{1}{8}$

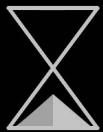
D.  $f\left(\frac{\pi}{2}\right) = 0$



$$\frac{1 + \sin 2\alpha}{\cos(2\alpha - 2\pi) \cdot \tan\left(\alpha - \frac{3\pi}{4}\right)} - \frac{1}{4} \sin 2\alpha \left[ \cot\frac{\alpha}{2} + \cot\left(\frac{3\pi}{2} + \frac{\alpha}{2}\right) \right]$$

When simplified reduces to:

- A. 1      B. 0      C.  $\sin^2\frac{\alpha}{2}$       D.  $\sin^2\alpha$



If  $\sin^3 x \cdot \sin 3x = \sum_{n=0}^6 a_n \cos nx$ , then

Column I	Column II
P. Value of $a_2 - a_4$ is equal to:	A. 0
Q. Value of $a_1 + a_3 + a_5$ is equal to:	B. $3/8$
R. Value of $a_2 - a_0 + a_5$ is equal to:	C. $3/4$
S. Value of $a_0 + a_2 + a_6$ is equal to:	D. $1/2$



Value of  $\cos^2 \frac{\pi}{8} + \cos^2 \frac{3\pi}{8} + \cos^2 \frac{5\pi}{8} + \cos^2 \frac{7\pi}{8}$  is equal to:

A. 1

B. 0

C. 2

D. 8



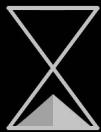
If  $\tan\left(\frac{\pi}{6} + \frac{\theta}{2}\right) \tan\left(\frac{\pi}{6} - \frac{\theta}{2}\right) = \frac{a \cos \theta - 1}{2 \cos \theta + b}$  then, **2a + 3b is equal to**

**A.** 3

**B.** 1

**C.** 7

**D.** 11



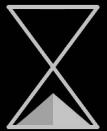
Column I	Column II
P. Value of $4(\cos^3 10^\circ + \sin^3 20^\circ) - 3(\cos 10^\circ + \sin 20^\circ) + 1 =$	A. 1
R. Value of $2(\sin 54^\circ - \cos 72^\circ) =$	B. 2
S. Value of $8(\sin^2 24^\circ - \sin^2 6^\circ) + 1 =$	C. $\sqrt{3}$
T. Value of $\tan 28^\circ + \tan 17^\circ + \tan 28^\circ \tan 17^\circ =$	D. $\sqrt{5}$



Column I	Column II
P. $3 \cos 20^\circ \cos 40^\circ \cos 60^\circ \cos 80^\circ =$	A. 1
R. $\cot 20^\circ \cot 40^\circ \cot 60^\circ \cot 80^\circ =$	B. $1/3$
S. $16 \sin 10^\circ \sin 20^\circ \sin 30^\circ \sin 40^\circ \sin 50^\circ \sin 60^\circ \sin 70^\circ \sin 80^\circ =$	C. $3/4$
T. $\tan 10^\circ \tan 30^\circ \tan 50^\circ \tan 70^\circ =$	D. $3/16$



Value of  $\tan^6 \frac{\pi}{9} - 33 \tan^4 \frac{\pi}{9} + 27 \tan^2 \frac{\pi}{9}$  is **equal to**:



If  $\frac{\cos\theta}{a} = \frac{\sin\theta}{b}$ , then  $\frac{a}{\sec 2\theta} + \frac{b}{\csc 2\theta}$  is equal to

- A. a
- B. b
- C. a/b
- D. a + b



# #JEELiveDaily Schedule

11<sup>th</sup>



Namo Sir | Physics

6:00 - 7:30 PM



Ashwani Sir | Chemistry

7:30 - 9:00 PM



Sameer Sir | Maths

9:00 - 10:30 PM

12<sup>th</sup>



Jayant Sir | Physics

1:30 - 3:00 PM



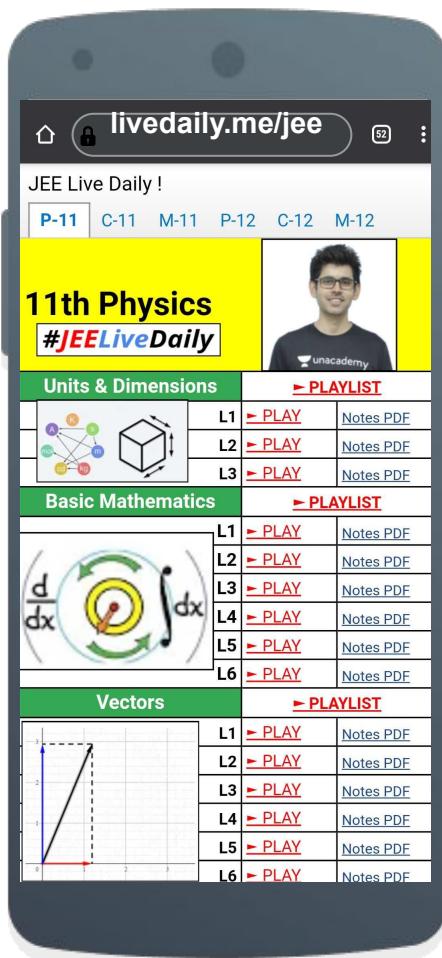
Anupam Sir | Chemistry

3:00 - 4:30 PM



Nishant Sir | Maths

4:30 - 6:00 PM



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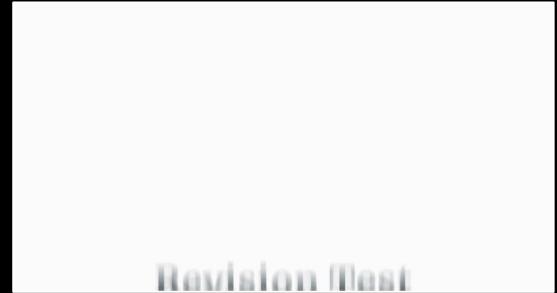
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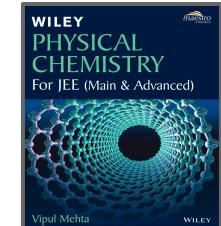
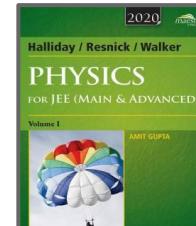
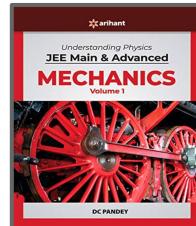
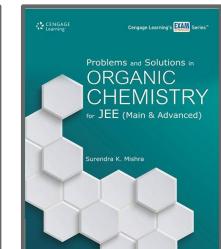
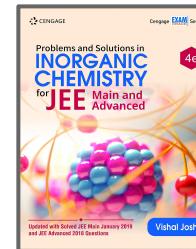
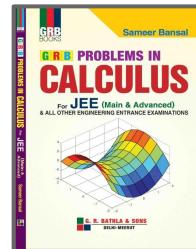
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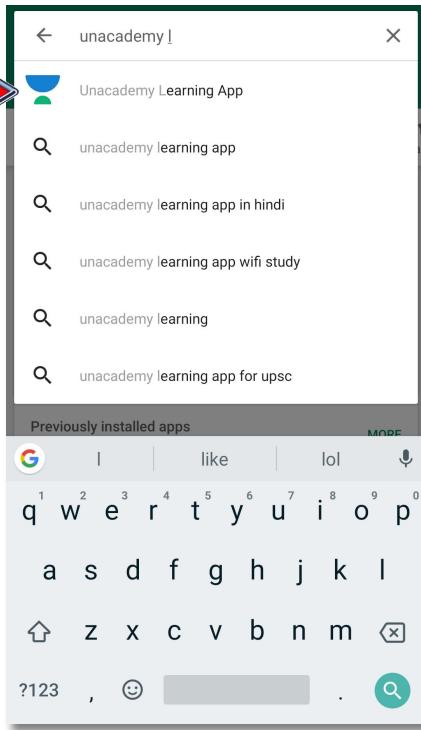


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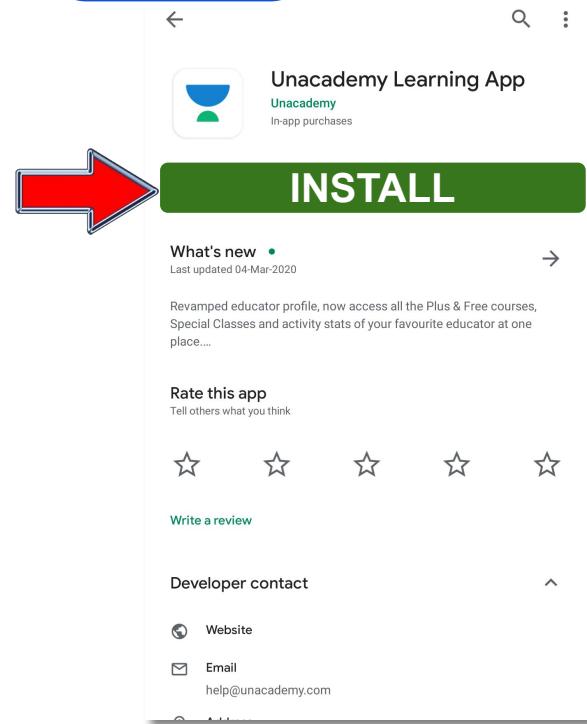


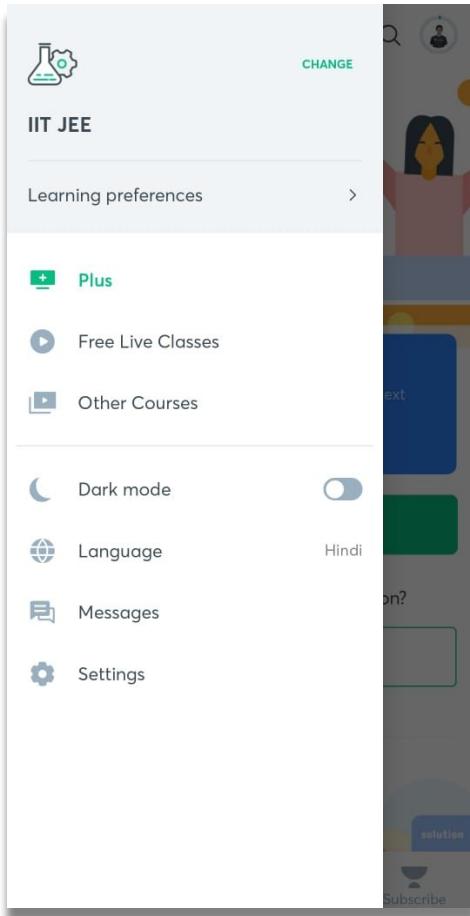
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## Step 2





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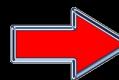


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