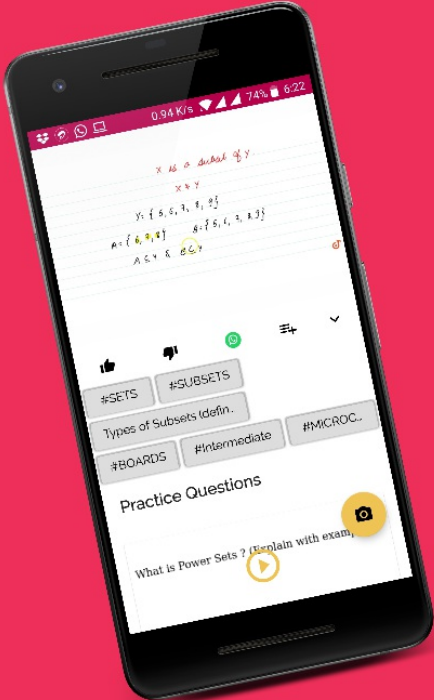


Ques No.	Question
1	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.1 - Q 1 Find the radian measures corresponding to the following degree measures: (i) 25° (ii) $47^\circ 30'$ (iii) 240° (iv) 520° ▶ Watch Free Video Solution on Doubtnut
2	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.1 - Q 2 Find the degree measures corresponding to the following radian measures (use $\pi = \frac{22}{7}$). (i) $\frac{11}{16}$ (ii) 4 (iii) $\frac{5\pi}{3}$ (iv) $\frac{7\pi}{6}$ ▶ Watch Free Video Solution on Doubtnut
3	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.1 - Q 3 A wheel makes 360 revolutions in one minute. Through how many radians does it turn in one second? ▶ Watch Free Video Solution on Doubtnut
4	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.1 - Q 4 Find the degree measure of the angle subtended at the centre of a circle of radius 100 cm by an arc of length 22 cm (use $\pi = \frac{22}{7}$). ▶ Watch Free Video Solution on Doubtnut
5	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.1 - Q 5 In a circle of diameter 40 cm. the length of a chord is 20 cm. Find the length of minor arc of the chord. ▶ Watch Free Video Solution on Doubtnut



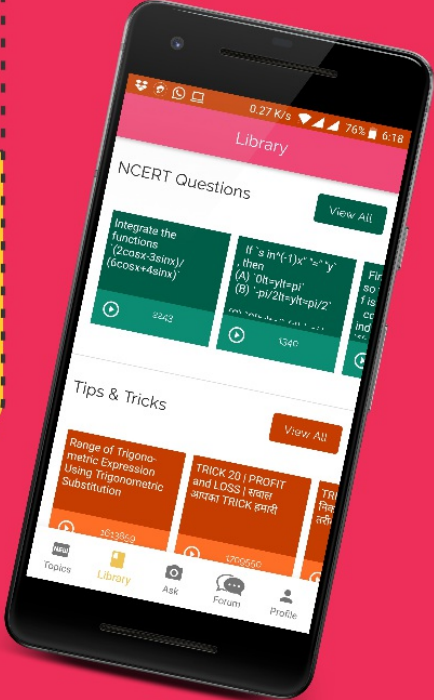
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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.1 - Q 6

If in two circles, arcs of the same length subtend angles 60° and 75° at the centre, find the ratio of their radii.

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.1 - Q 7

Find the angle in radian through which a pendulum swings if its length is 75 cm and the tip describes an arc of length (i) 10 cm (ii) 15 cm (iii) 21 cm

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 1

Find the value of other five trigonometric function $\cos x = -\frac{1}{2}$, x lies in third quadrant.

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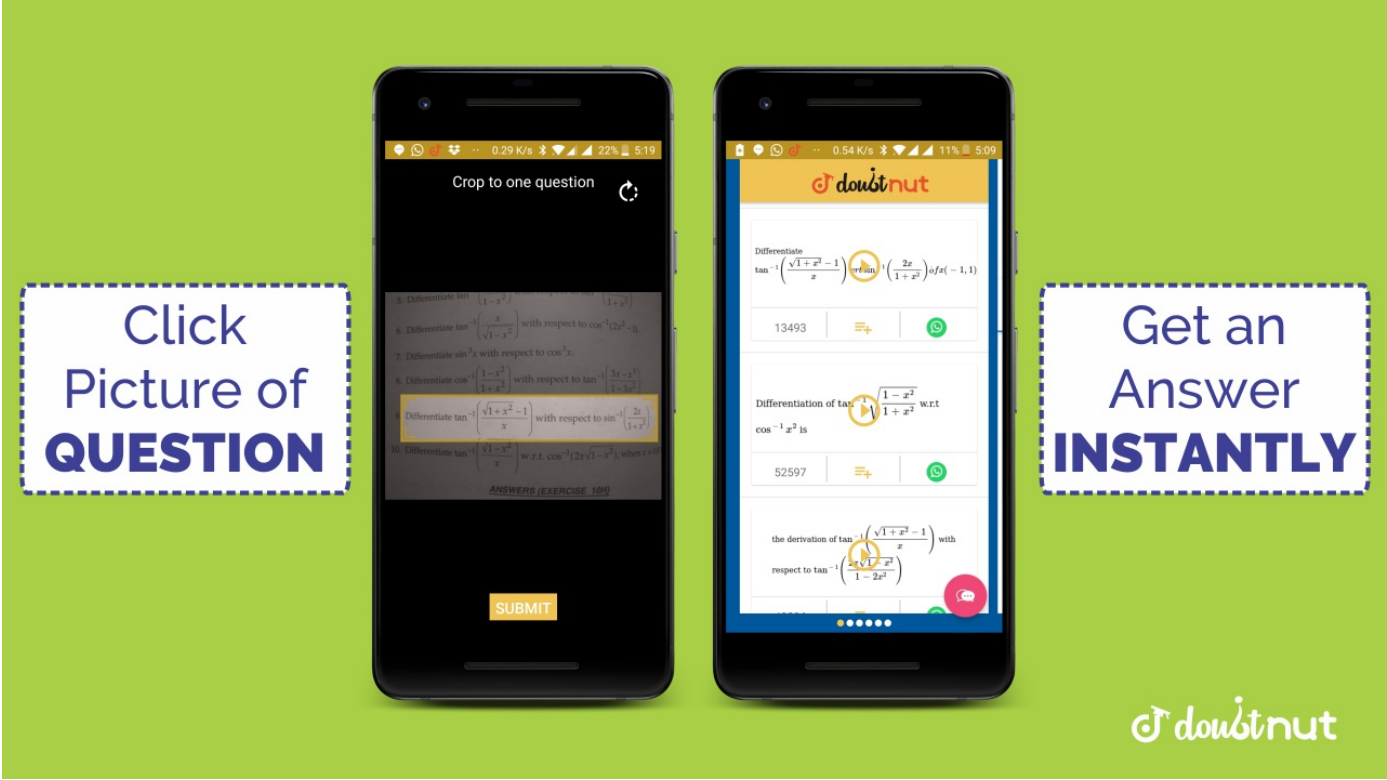
NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 2

Find the value of other five trigonometric function $\sin x = \frac{3}{5}$, x lies in second quadrant.

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 3

	Find the value of other five trigonometric function $\cot x = \frac{3}{4}$, x lies in third quadrant. ▶ Watch Free Video Solution on Doubtnut
11	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 4 Find the value of other five trigonometric function $\sec x = \frac{13}{5}$, x lies in fourth quadrant. ▶ Watch Free Video Solution on Doubtnut
	
12	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 5 Find the value of other five trigonometric function $\tan x = -\frac{5}{12}$, x lies in second quadrant. ▶ Watch Free Video Solution on Doubtnut
13	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 6 Find the values of the trigonometric function $\sin 765^\circ$ ▶ Watch Free Video Solution on Doubtnut
14	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 7 Find the values of the trigonometric function $\csc(-1410^\circ)$. ▶ Watch Free Video Solution on Doubtnut

15	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 8 Find the values of the trigonometric function $\tan \frac{19\pi}{3}$ ▶ Watch Free Video Solution on Doubtnut
16	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 9 Find the values of the trigonometric function $\sin \left(-\frac{11\pi}{3} \right)$ ▶ Watch Free Video Solution on Doubtnut
17	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.2 - Q 10 Find the values of the trigonometric function $\cot \left(-\frac{15\pi}{4} \right)$ ▶ Watch Free Video Solution on Doubtnut
	
	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 1

18	$\sin^2 \frac{\pi}{6} + \cos^2 \frac{\pi}{3} - \tan^2 \frac{\pi}{4} = -\frac{1}{2}$ ▶ Watch Free Video Solution on Doubtnut
19	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 2 $2 \sin^2 \left(\frac{\pi}{6} \right) + \operatorname{cosec}^2 \left(7 \frac{\pi}{6} \right) \frac{\cos^2 \pi}{3} = \frac{3}{2}$ ▶ Watch Free Video Solution on Doubtnut
20	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 3 $\cot^2 \frac{\pi}{6} + \operatorname{cosec} \frac{5\pi}{6} + 3 \tan^2 \frac{\pi}{6} = 6$ ▶ Watch Free Video Solution on Doubtnut
21	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 4 $2 \sin^2 \frac{3\pi}{4} + 2 \cos^2 \frac{\pi}{4} + 2 \sec^2 \frac{\pi}{3} = 10$ ▶ Watch Free Video Solution on Doubtnut
22	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 5 Find the value of : (i) $\sin 75^\circ$ (ii) $\tan 15^\circ$ ▶ Watch Free Video Solution on Doubtnut
23	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 6 Prove that:

	$\begin{aligned} &\cos\left(\frac{\pi}{4} - x\right)\cos\left(\frac{\pi}{4} - y\right) \\ &- \sin\left(\frac{\pi}{4} - x\right)\sin\left(\frac{\pi}{4} - y\right) \\ &= \sin(x + y) \end{aligned}$ ▶ Watch Free Video Solution on Doubtnut
24	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 7 Prove that: $\frac{\tan\left(\frac{\pi}{4} + x\right)}{\tan\left(\frac{\pi}{4} - x\right)} = \left(\frac{1 + \tan x}{1 - \tan x}\right)^2$ ▶ Watch Free Video Solution on Doubtnut
25	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 8 Prove that: $\frac{\cos(\pi + x)\cos(-x)}{\sin(\pi - x)\cos\left(\frac{\pi}{2} + x\right)} = \cot^2 x$ ▶ Watch Free Video Solution on Doubtnut

26	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 9 Prove that: $\cos\left(\frac{3\pi}{2} + x\right)\cos(2x + x)$ $\left[\cot\left(\frac{3\pi}{2} - x\right) + \cot(2\pi + x)\right] = 1$ ▶ Watch Free Video Solution on Doubtnut
27	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 10 Prove that: $\frac{\sin(n + 1)x \sin(n + 2)x}{\cos nx} = \cos x$ ▶ Watch Free Video Solution on Doubtnut
28	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 11 Prove that: $\cos\left(\frac{3\pi}{4} + x\right) - \cos\left(\frac{3\pi}{4} - x\right) = -\sqrt{2}\sin x$ ▶ Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 12

29	Prove that: $\sin^2 6x - \sin^2 4x$ $= \sin 2x \sin 10x$ ▶ Watch Free Video Solution on Doubtnut
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30	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 13 Prove that: $\cos^2 2x - \cos^2 6x$ $= \sin 4x \sin 8x$ ▶ Watch Free Video Solution on Doubtnut
31	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 14 Prove that: $\sin 2x + 2 \sin 4x$ $+ \sin 6x$ $= 4 \cos^2 x \sin 4$ ▶ Watch Free Video Solution on Doubtnut
32	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 15 Prove that:

$$\begin{aligned} & \cot 4x \\ & (\sin 5x \\ & + \sin 3x) \\ & = \cot x \\ & (\sin 5x \\ & \sin 3x) \end{aligned}$$

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 16

Prove that:

$$\frac{\cos 9x - \cos 5x}{\sin 17x - \sin 3x} = \frac{\sin 2x}{\cos 10x}$$

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 17

Prove that:

$$\frac{\sin 5x + \sin 3x}{\cos 5x + \cos 3x} = \tan 4x$$

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 18

Prove that: $\frac{\sin x - \sin y}{\cos x + \cos y} = \tan \frac{x - y}{2}$

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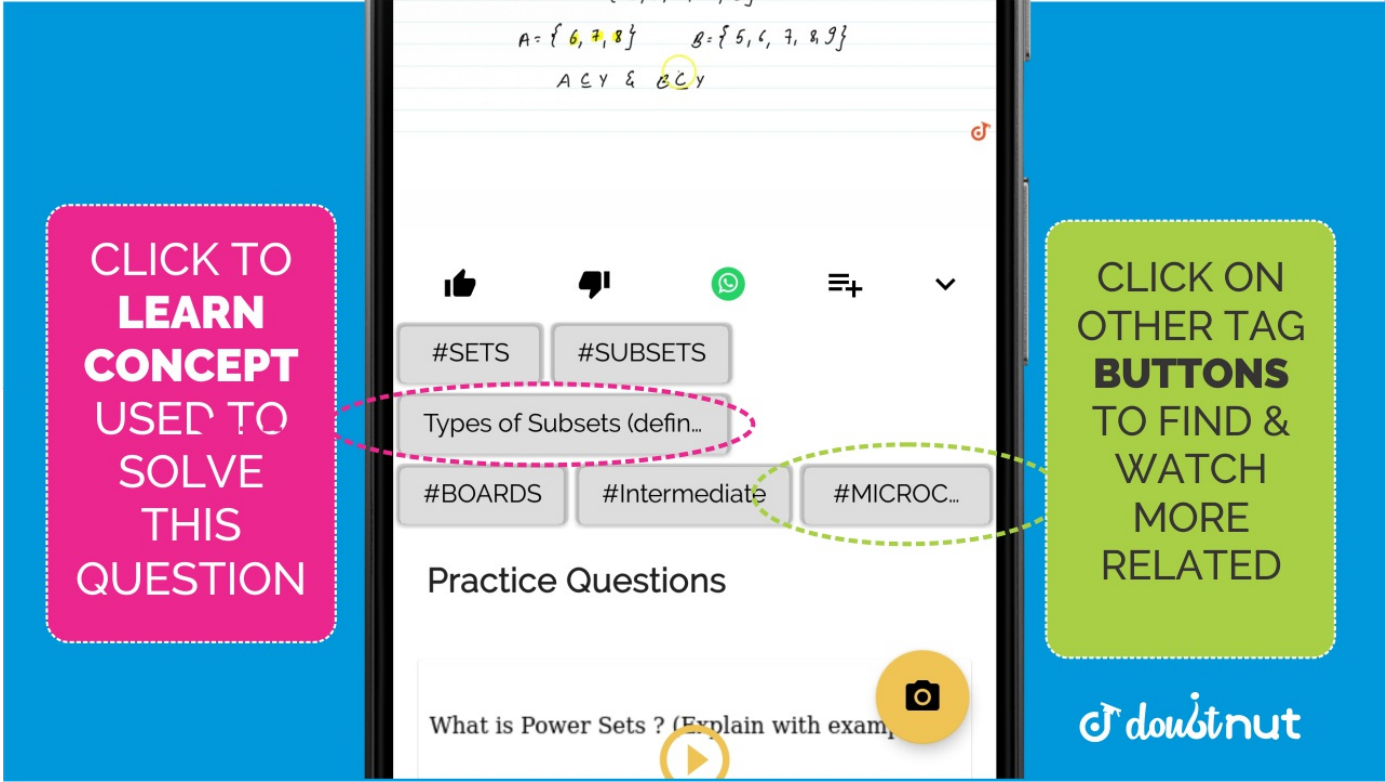
	
36	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 19 Prove that: $\frac{\sin x + \sin 3x}{\cos x + \cos 3x} = \tan 2x$ ▶ Watch Free Video Solution on Doubtnut
37	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 20 Prove that: $\frac{\sin x - \sin 3x}{\sin^2 x - \cos^2 x} = 2 \sin x$ ▶ Watch Free Video Solution on Doubtnut
38	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 21 Prove that: $\frac{\cos 4x + \cos 3x + \cos 2x}{\sin 4x + \sin 3x + \sin 2x} = \cot 3x$ ▶ Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 22 Prove that:

39	$\frac{\cot x \cot 2x}{\cot 3x} = 1$ ▶ Watch Free Video Solution on Doubtnut
40	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 23 Prove that: $\frac{\tan 4x}{1 - 6 \tan^2 x + \tan^4 x} = \frac{4 \tan x (1 - \tan^2 x)}{1 - 6 \tan^2 x + \tan^4 x}$ ▶ Watch Free Video Solution on Doubtnut
41	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 24 Prove that: $\cos 4x = 1 - 8 \sin^2 x \cos^2 x$ ▶ Watch Free Video Solution on Doubtnut
	
42	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.3 - Q 25 Prove that:

	$\cos 6x = 32 \cos^6 x$ $- 48 \cos^4 x$ $+ 18 \cos^2 x - 1$ ▶ Watch Free Video Solution on Doubtnut
43	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.4 - Q 1 Find the principal and general solution of $\tan x = \sqrt{3}$ ▶ Watch Free Video Solution on Doubtnut
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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.4 - Q 6

Find the general solution :

$$\cos 3x + \cos x = 0$$

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.4 - Q 7

Find the general solution :

$$\sin 2x + \cos x = 0$$

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.4 - Q 8

Find the general solution : $\sec^2 2x = 1 - \tan 2x$

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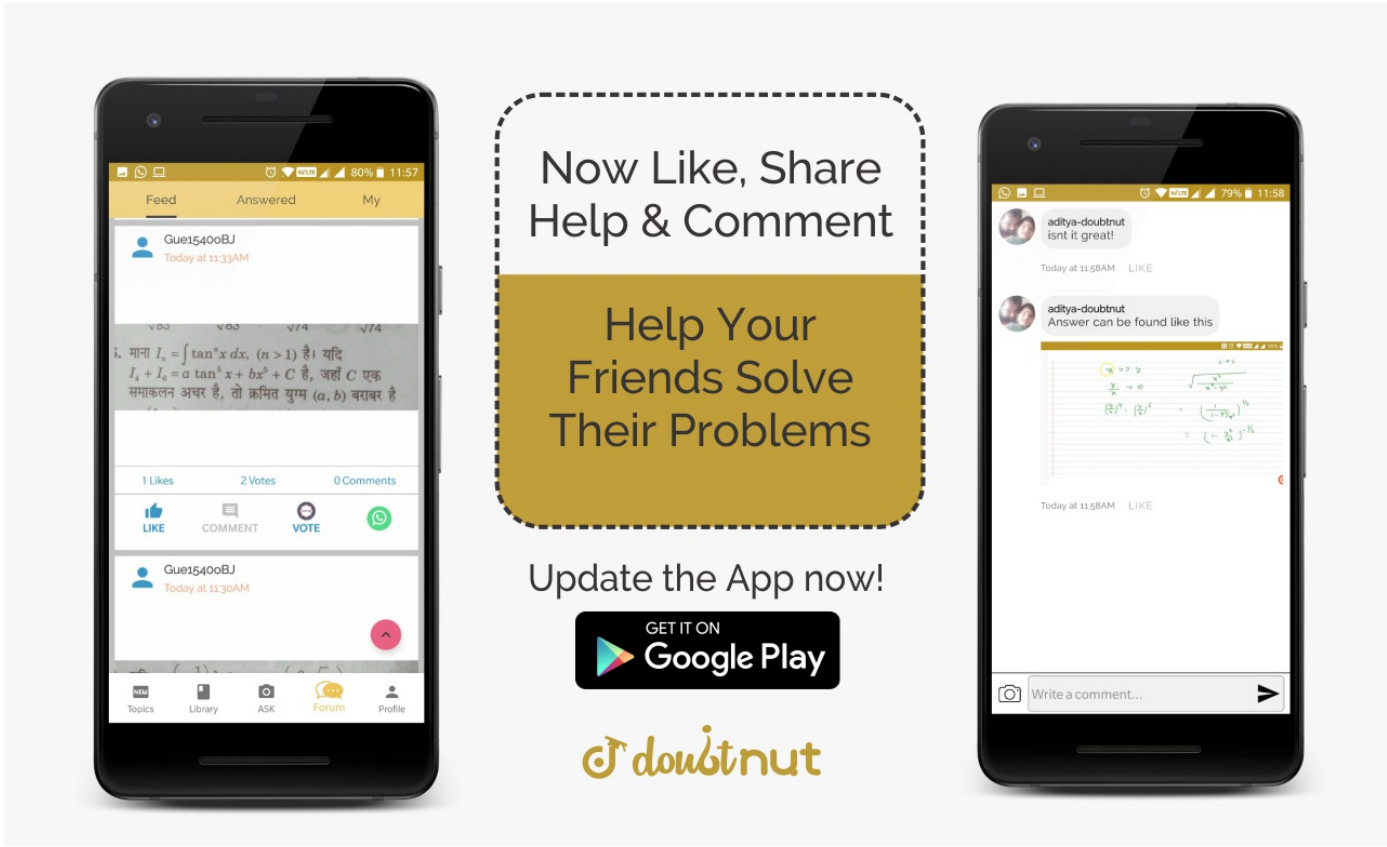
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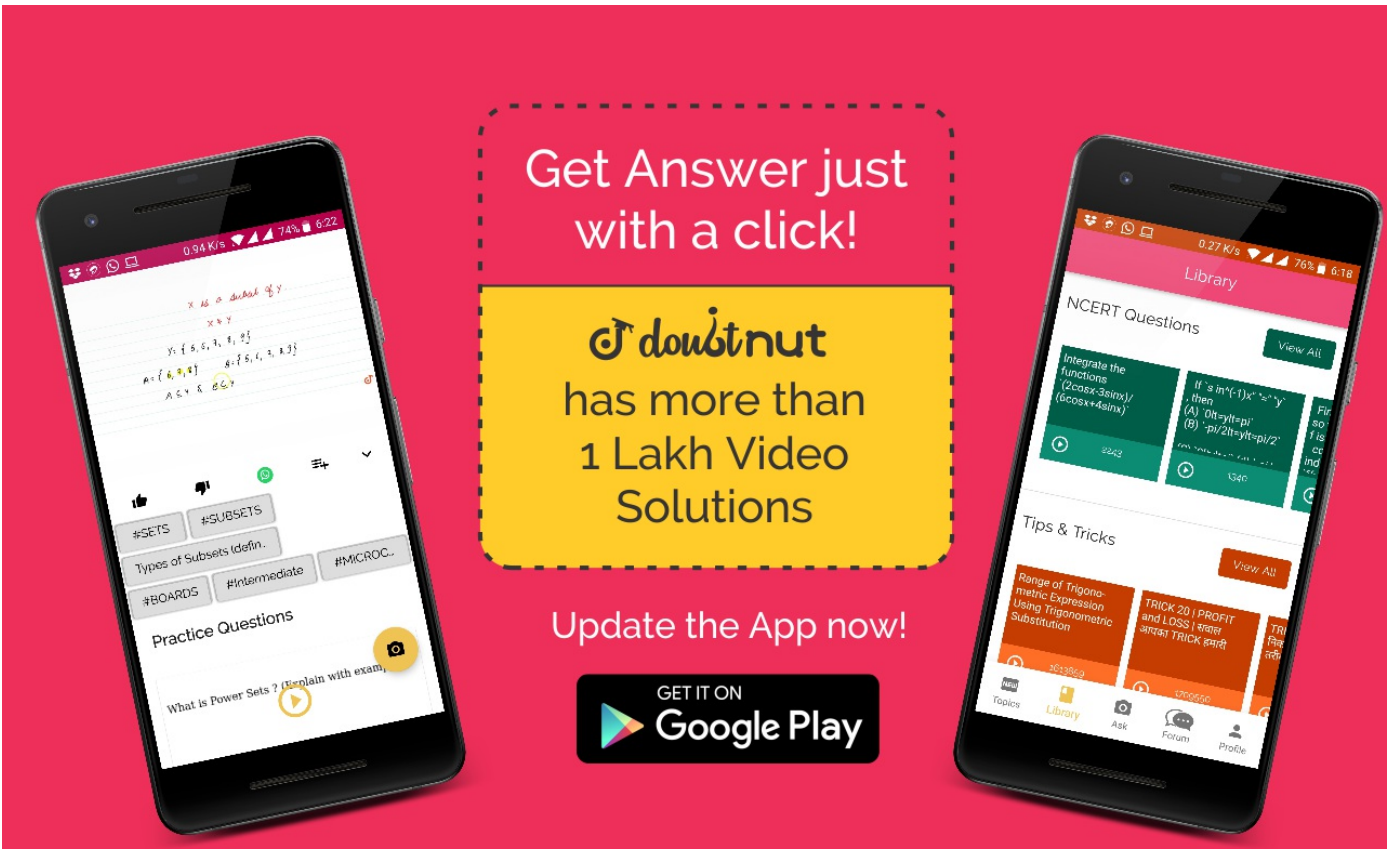
Find the general solution :

$$\sin x + \sin 3x = \sin 5x$$

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52	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 1 In any triangle ABC, if $a = 18, b = 24, c = 30$, find $\cos A, \cos B, \cos C$ ▶ Watch Free Video Solution on Doubtnut
53	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 2 In any triangle ABC, if $a = \sqrt{18}, b = \sqrt{24}, c = \sqrt{30}$, find $\sin A, \sin B, \sin C$ ▶ Watch Free Video Solution on Doubtnut
	
54	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 3 For any triangle ABC, prove that $\frac{a+b}{c} = \frac{\cos\left(\frac{A-B}{2}\right)}{\frac{\sin C}{2}}$ ▶ Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 4 For any triangle ABC, prove that

55	$\frac{a-b}{c}$ $= \frac{\sin\left(\frac{A-B}{2}\right)}{\frac{\cos C}{2}}$ ▶ Watch Free Video Solution on Doubtnut
56	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 5 For any triangle ABC, prove that $\frac{\sin(B-C)}{2}$ $= \frac{b-c}{a} \left(\frac{\cos A}{2} \right)$ ▶ Watch Free Video Solution on Doubtnut
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58	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 7 For any triangle ABC, prove that $a(\cos C - \cos B)$ $= \frac{2}{\cos^2 A} (bc)$ ▶ Watch Free Video Solution on Doubtnut
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60

For any triangle ABC, prove that

$$(b + c) \frac{\cos(B + C)}{2}$$

$$= a \frac{\cos(B - C)}{2}$$

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61

For any triangle ABC, prove that

$$a \cos A + b \cos B$$

$$+ c \cos C$$

$$= 2a \sin B \sin C$$

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62

For any triangle ABC, prove that

$$\frac{\cos A}{a} + \frac{\cos B}{b}$$

$$+ \frac{\cos C}{c}$$

$$= \frac{a^2 + b^2 + c^2}{2abc}$$

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63	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 12 For any triangle ABC, prove that $\begin{aligned} & (b^2c^2) \cot A \\ & + (c^2a^2) \cot B \\ & + (a^2b^2) \cot C \\ & = 0 \end{aligned}$ ▶ Watch Free Video Solution on Doubtnut

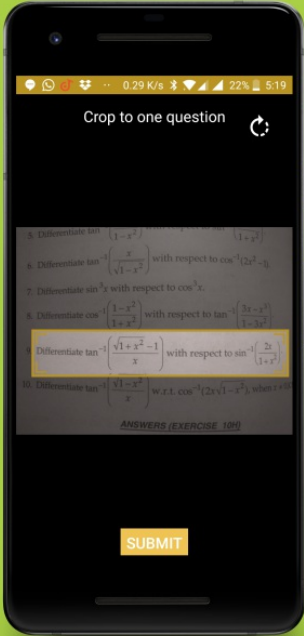
64	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 13 For any triangle ABC, prove that $\begin{aligned} & \frac{b^2 - c^2}{a^2} \sin 2A \\ & + \frac{c^2 - a^2}{b^2} \sin 2B \\ & + \frac{a^2 - b^2}{c^2} \sin 2C \\ & = 0 \end{aligned}$ ▶ Watch Free Video Solution on Doubtnut

65	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 14 A tree stands vertically on a hill side which makes an angle of 15° with the horizontal. From a point on the ground 35m down the hill from the base of the tree, the angle of elevation of the top of the tree is 60° . Find the height of the ▶ Watch Free Video Solution on Doubtnut

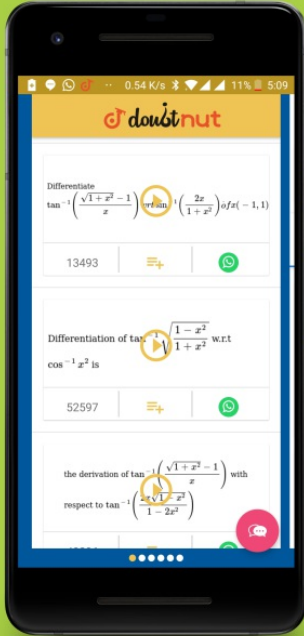


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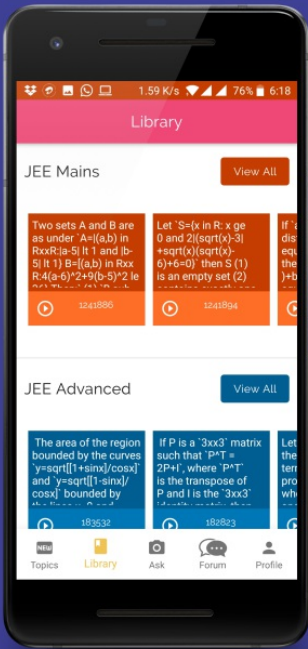


66	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - EXERCISE 3.5 - Q 15 Two ships leave a port at the same time. One goes 24 km per hour in the direction N 45°E and other travels 32 km per hour in the direction S 75°E . Find the distance between the ships at the end of 3 hours. ▶ Watch Free Video Solution on Doubtnut
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69	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - MISCELLANEOUS EXERCISE - Q 2 Prove that: $\left(\sin 3x + \sin x \right) \left(\cos 3x + \cos x \right) = 4 \cos^2 x$ ▶ Watch Free Video Solution on Doubtnut
70	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - MISCELLANEOUS EXERCISE - Q 3 Prove that: $\frac{(\cos x + \cos y)^2 + (\sin x - \sin y)^2}{2} = 4 \cos^2 \frac{x+y}{2}$ ▶ Watch Free Video Solution on Doubtnut

71	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - MISCELLANEOUS EXERCISE - Q 4 Prove that: $ \begin{aligned} &(\cos x - \cos y)^2 \\ &+ (\sin x - \sin y)^2 \\ &= \frac{4 \sin^2}{x - y} \end{aligned} $ ▶ Watch Free Video Solution on Doubtnut
	
72	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - MISCELLANEOUS EXERCISE - Q 5 prove that $\sin x + \sin 3x + \sin 5x + \sin 7x = 4 \cos x \cos 2x \sin 4x$ ▶ Watch Free Video Solution on Doubtnut
73	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - MISCELLANEOUS EXERCISE - Q 6 Prove that: $ \begin{aligned} &(\sin 7x + \sin 5x) \\ &+ (\sin 9x + \sin 3x) \\ &\frac{(\cos 7x + \cos 5x)}{+ (\cos 9x + \cos 3x)} \\ &= \tan 6x \end{aligned} $ ▶ Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - MISCELLANEOUS EXERCISE - Q 7 Prove that:

74	$\sin 3x + \sin 2x + \sin x = 4 \sin x \cos \frac{x}{2} \cos \frac{3x}{2}$ ▶ Watch Free Video Solution on Doubtnut
75	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - MISCELLANEOUS EXERCISE - Q 8 Find $\sin \frac{x}{2}$, $\cos \frac{x}{2}$ and $\tan \frac{x}{2}$ of the following : $\tan x = -\frac{4}{3}$, x in quadrant II ▶ Watch Free Video Solution on Doubtnut
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78	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 1 Convert $40^{\circ}20'$ into radian measure.

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79	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 2 Convert 6 radians into degree measure. ▶ Watch Free Video Solution on Doubtnut
80	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 3 Find the radius of the circle in which a central angle of 60° intercepts an arc of length 37.4 cm (use $\pi = \frac{22}{7}$). ▶ Watch Free Video Solution on Doubtnut
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82	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 5 If the arcs of the same lengths m two circles subtend angles 65° and 110° at the centre, find the ratio of their radii. ▶ Watch Free Video Solution on Doubtnut
83	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 6 If $\cos x = -\frac{3}{5}$, x lies in the third quadrant, find the values of other five trigonometric functions. ▶ Watch Free Video Solution on Doubtnut



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If $\cot x = -\frac{5}{12}$, lies in second quadrant, find the values of other five trigonometric functions.

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 8

Find the value of $\sin \frac{31\pi}{3}$.

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 9

Find the value of $\cos(-1710^\circ)$.

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 10

Prove that $3 \sin \frac{\pi}{6} \sec \frac{\pi}{3} - 4 \sin \frac{5\pi}{6} \cot \frac{\pi}{4} = 1$

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Find the value of $\sin 15^\circ$.

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89	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 12 Find the value of $\tan \frac{13\pi}{12}$. ▶ Watch Free Video Solution on Doubtnut
90	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 13 Prove that $\frac{\sin(x + y)}{\sin(x - y)} = \frac{\tan x + \tan y}{\tan x - \tan y}$ ▶ Watch Free Video Solution on Doubtnut
91	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 14 Show that $\frac{\tan 3x}{\tan 2x \tan x} = \tan 3x - \tan 2x - \tan x$ ▶ Watch Free Video Solution on Doubtnut
	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 15

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Prove that

$$\cos\left(\frac{\pi}{4} + x\right) + \cos\left(\frac{\pi}{4} - x\right) = \sqrt{2} \cos x$$

.

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 16

Prove that

$$\frac{\cos 7x + \cos 5x}{\sin 7x - \sin 5x} = \cot x$$

.

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NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 17

Prove that

$$\frac{\sin 5x - 2 \sin 3x + \sin x}{\cos 5x - \cos x} = \tan x$$

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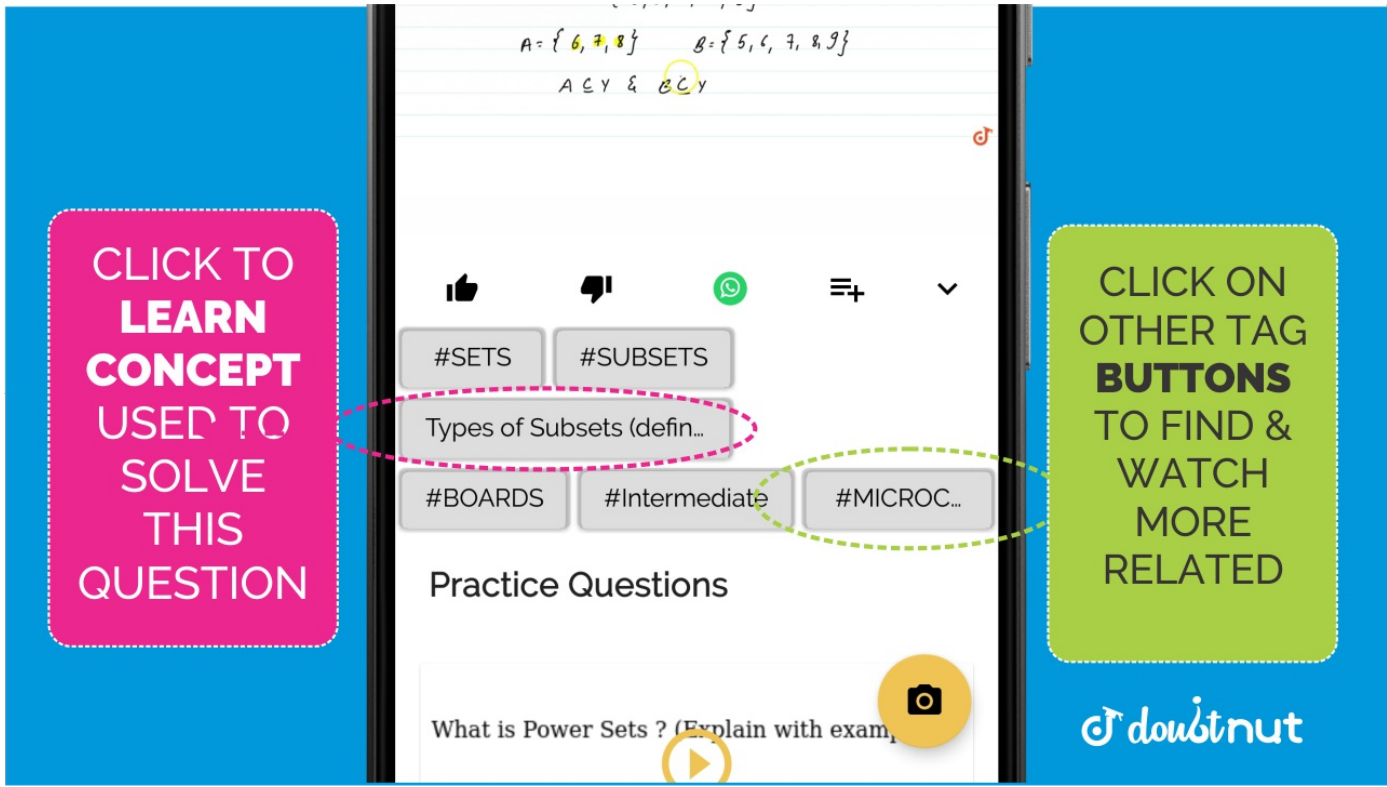
95

NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 18

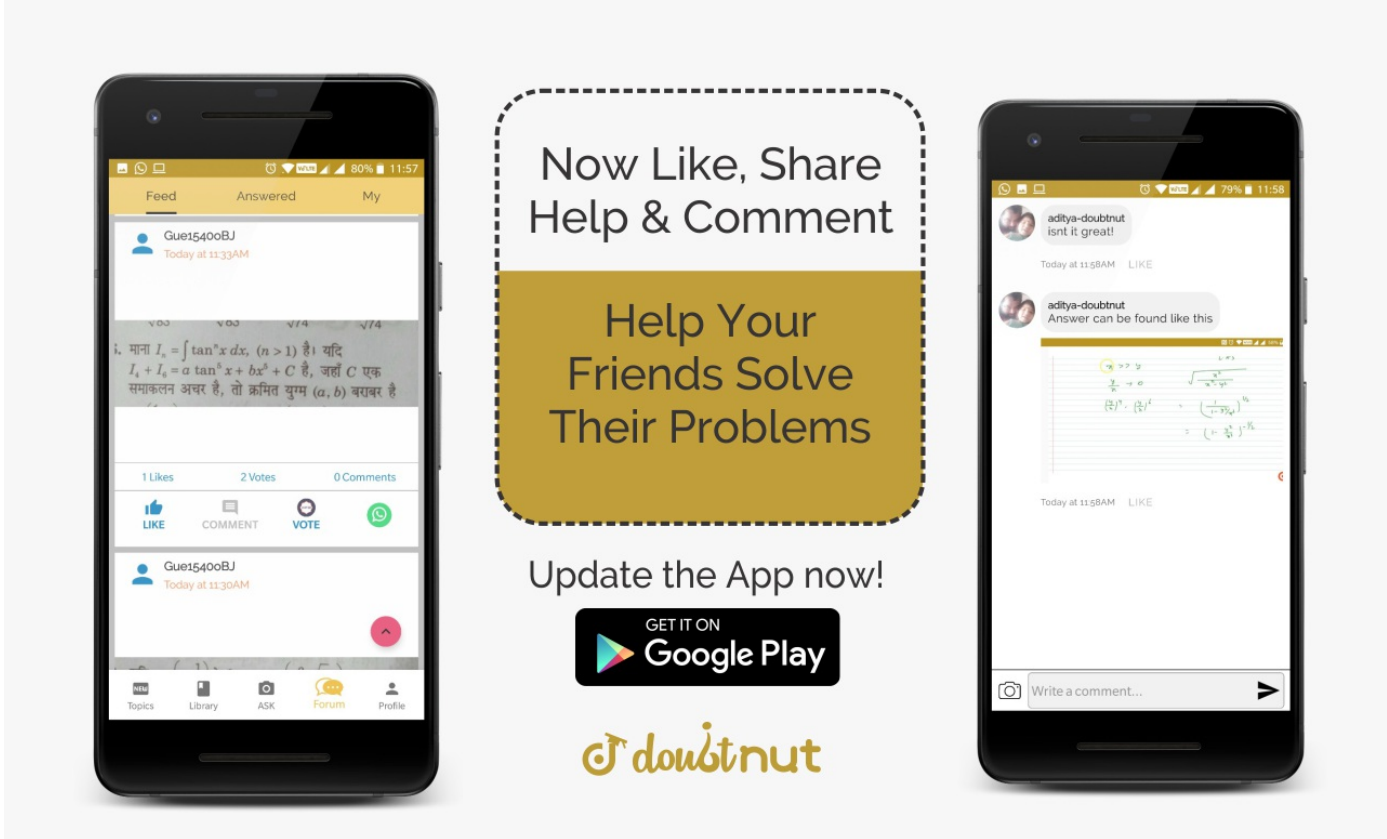
Find the principal solution of the equation $\sin x = \frac{\sqrt{3}}{2}$.

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96	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 19 Find the principal solution of the equation $\tan x = -\frac{1}{\sqrt{3}}$. ▶ Watch Free Video Solution on Doubtnut
97	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 20 Find the solution of $\sin x = -\frac{\sqrt{3}}{2}$. ▶ Watch Free Video Solution on Doubtnut
98	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 21 Solve $\cos x = \frac{1}{2}$. ▶ Watch Free Video Solution on Doubtnut
99	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 22 Solve $\tan 2x = -\cot\left(x + \frac{\pi}{3}\right)$ ▶ Watch Free Video Solution on Doubtnut
100	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 23 Solve

	$\begin{aligned} \sin & 2x \\ - & \sin 4x \\ + & \sin 6x \\ = & 0 \\ . \end{aligned}$ ▶ Watch Free Video Solution on Doubtnut
101	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 24 Solve $2 \cos^2 x + 3 \sin x = 0$ ▶ Watch Free Video Solution on Doubtnut
	
102	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 25 If $\sin x = \frac{3}{5}, \cos y = -\frac{12}{13},$ where x and y both lie in second quadrant, find the value of $\sin (x + y)$. ▶ Watch Free Video Solution on Doubtnut
103	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 26 Prove that

	$\cos 2x \frac{\cos x}{2}$ $- \cos 3x \cos \left(9 \frac{x}{2}\right)$ $= \sin 5x \frac{\sin(5x)}{2}$. 📺 Watch Free Video Solution on Doubtnut
104	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 27 Find the value of $\tan \frac{\pi}{8}$. 📺 Watch Free Video Solution on Doubtnut
105	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 28 If $\tan x = 3/4$, $\pi < x < \frac{3\pi}{2}$, find the value of $\sin(x/2)$, $\cos(x/2)$, $\tan(x/2)$ 📺 Watch Free Video Solution on Doubtnut
106	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 29 Prove that $\cos^2 x$ $+ \cos^2 \left(x + \frac{\pi}{3}\right)$ $+ \cos^2 \left(x - \frac{\pi}{3}\right)$ $= \frac{3}{2}$. 📺 Watch Free Video Solution on Doubtnut
107	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 30 In triangle ABC, prove that $\frac{\tan(B - C)}{2}$ $= \frac{b - c}{b + c} \cot \frac{A}{2}$

	$\frac{\tan(C - A)}{2}$ $= \frac{c - a \cot B}{\tan(A - B)^2}$ $= \frac{a - b \cot C}{a + b} \cdot \frac{1}{2}$ ▶ Watch Free Video Solution on Doubtnut
	
108	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 31 In any triangle ABC, prove that $a \sin(B - C) + b \sin(C - A) + c \sin(A - B) = 0$ ▶ Watch Free Video Solution on Doubtnut
109	NCERT - CLASS 11 - CHAPTER 3 TRIGONOMETRIC FUNCTIONS - SOLVED EXAMPLES - Q 32 The angle of elevation of the top point P of the vertical tower PQ of height h from a point A is 45° and from a point B, the angle of elevation is 60°, where B is a point at a distance d from the point A measured along the line AB which makes an angle 30° with AQ. Prove that $d = h(\sqrt{3} - 1)$. ▶ Watch Free Video Solution on Doubtnut

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In triangle ABC , prove that

$$\frac{\tan(B - C)}{2} = \left[\frac{b - c}{b + c} \right] \frac{\cot A}{2}$$
$$, \frac{\tan(C - A)}{2} = \left[\frac{c - a}{c + a} \right] \frac{\cot B}{2}$$
$$, \frac{\tan(A - B)}{2} = \left[\frac{a - b}{a + b} \right] \frac{\cot c}{2}$$

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