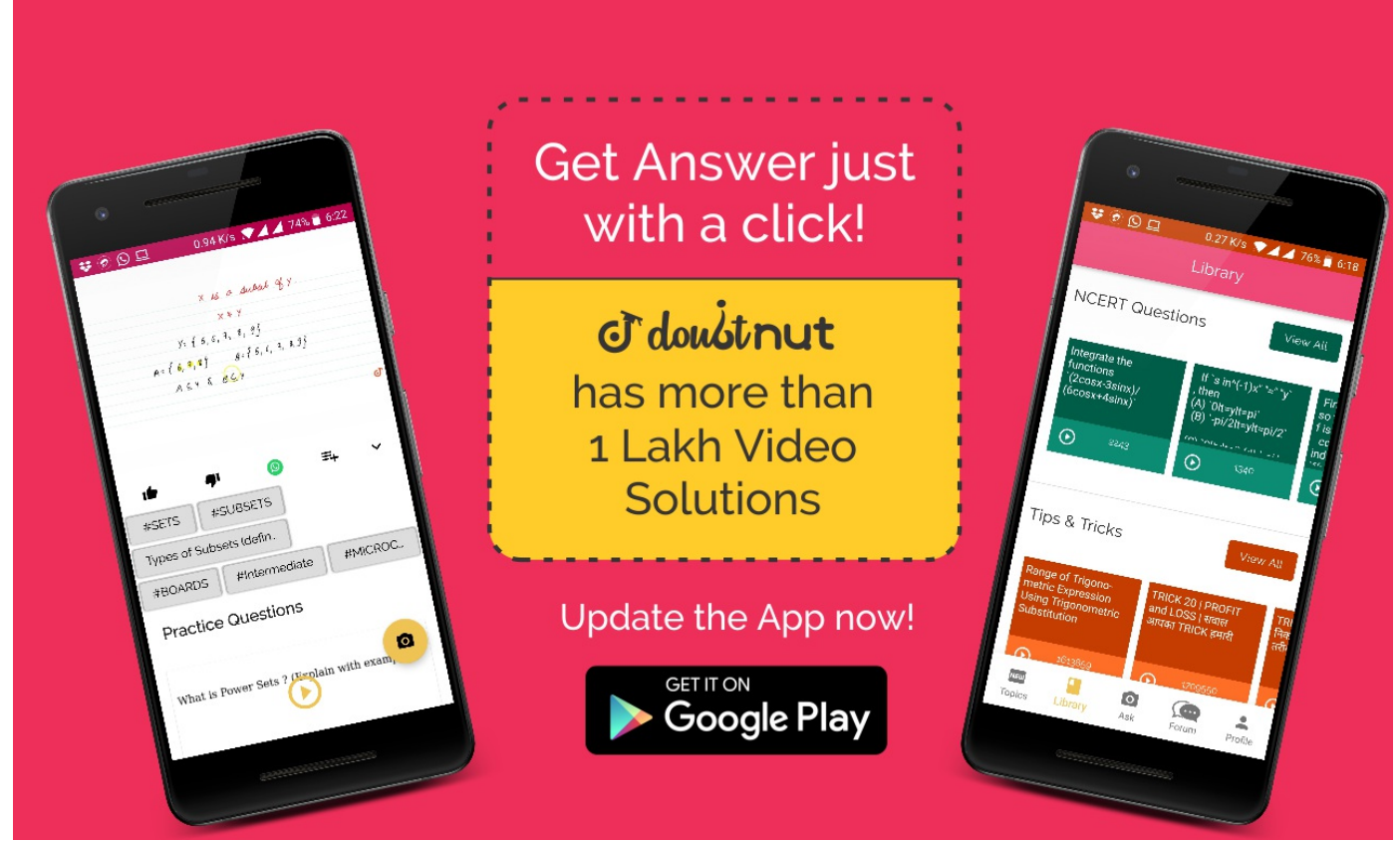


Ques No.	Question
1	<p>NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 1</p> <p>In <math>\triangle ABC</math>, right-angled at B, <math>AB = 24</math> cm, <math>BC = 7</math> cm . Determine: (i) <math>\sin A</math>, <math>\cos A</math> (ii) <math>\sin C</math>, <math>\cos C</math></p> <p><a href="#">Watch Free Video Solution on Doubtnut</a></p>
2	<p>NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 2</p> <p>Find <math>\tan P - \cot R</math>.</p> <p><a href="#">Watch Free Video Solution on Doubtnut</a></p>
3	<p>NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 3</p> <p>If <math>\sin A = \frac{3}{4}</math>, calculate <math>\cos A</math> and <math>\tan A</math>.</p> <p><a href="#">Watch Free Video Solution on Doubtnut</a></p>
4	<p>NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 4</p> <p>Given <math>15 \cot A = 8</math>, find <math>\sin A</math> and <math>\sec A</math>.</p> <p><a href="#">Watch Free Video Solution on Doubtnut</a></p>
5	<p>NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 5</p> <p>Given <math>\sec \theta = \frac{13}{12}</math>, calculate all other trigonometric ratios.</p> <p><a href="#">Watch Free Video Solution on Doubtnut</a></p>



6

**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 6**

If  $\angle A$  and  $\angle B$  are acute angles such that  $\cos A = \cos B$  . then show that  $\angle A = \angle B$  .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 7**

If  $\cot \theta = \frac{7}{8}$  , evaluate: (i)

$$\frac{(1 + \sin \theta)(1 - \sin \theta)}{(1 + \cos \theta)(1 - \cos \theta)}$$

(ii)  $\cot^2 \theta$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 8**

If  $3 \cot A = 4$  , check whether

$$\frac{1 - \tan^2 A}{1 + \tan^2 A} = \cos^2 A - \sin^2 A$$

or not.

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 9**

In triangle ABC, right-angled at B. if  $\tan A = \frac{1}{\sqrt{3}}$  find the value of:

$$(i) \quad \sin A \cos C$$

$$+ \cos A \sin C (ii)$$

$$\cos A \cos C \sin A \sin C$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 10**

In  $\triangle PQR$ , right angled at Q,  $PR + QR = 25\text{cm}$  and  $PQ = 5\text{cm}$ . Determine the values of  $\sin P$ ,  $\cos P$  and  $\tan P$ .

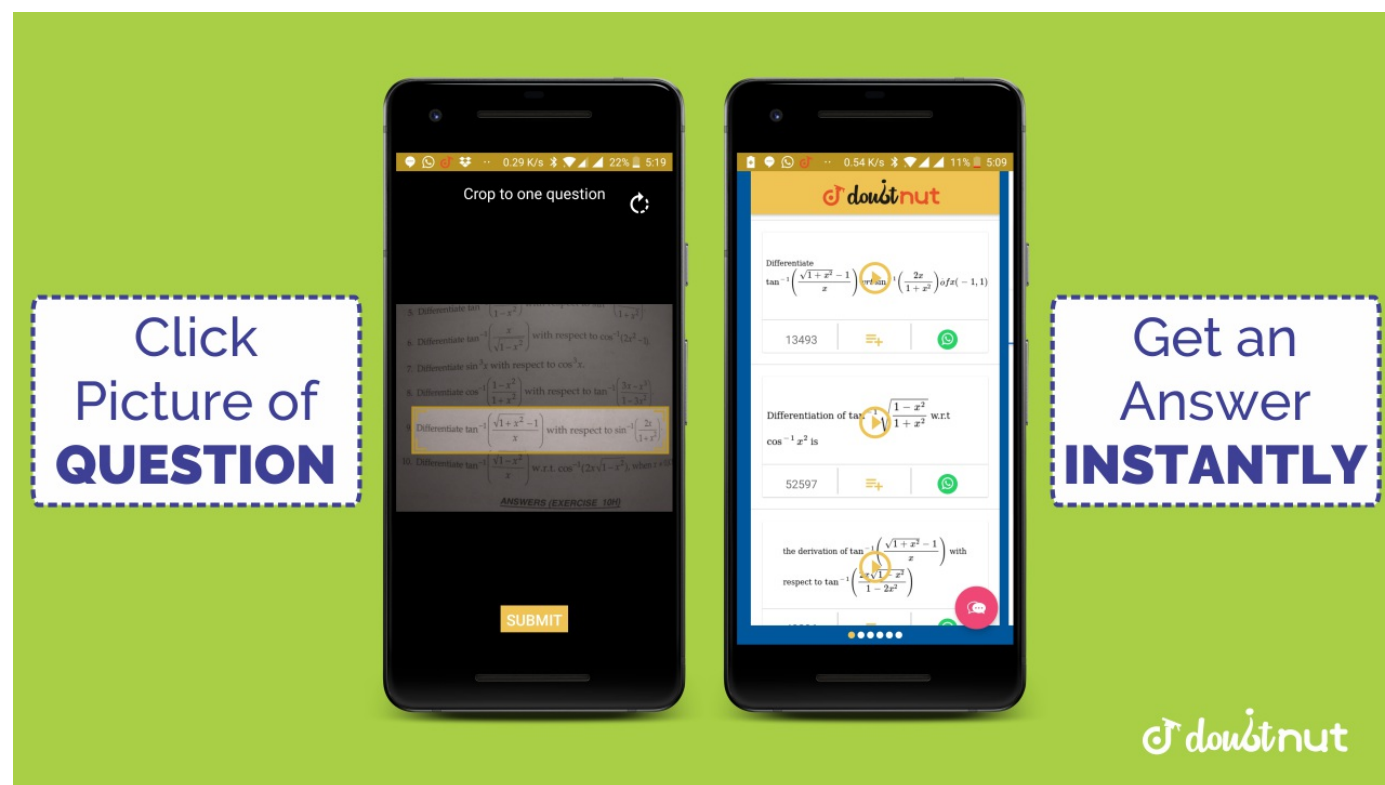
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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.1 - Q 11**

State whether the following are true or false. Justify your answer. (i) The value of  $\tan A$  always less than 1. (ii)  $\sec A = \frac{12}{5}$  for some value of angle A (iii)  $\cos A$  is the abbreviation used for the cosecant of angle A. (iv)  $\cot A$  is the product of  $\cot$  and A (v)  $\sin \theta = \frac{4}{3}$  for some angle  $\theta$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.2 - Q 1**

Evaluate the following (i)  
 $\sin 60^\circ \cos 30^\circ$   
 $+ \sin 30^\circ \cos 60^\circ$   
 (ii)  
 $2 \tan^2 45^\circ$   
 $+ \cos^2 30^\circ$   
 $- \sin^2 60^\circ$

$$(iii) \frac{\cos 45^\circ}{\sec 30^\circ + \operatorname{cosec} 30^\circ} \quad (iv) \frac{\sin 30^\circ + \tan 45^\circ - \operatorname{cosec} 60^\circ}{\sec 30^\circ + \cos 60^\circ + \cot 45^\circ} \quad (v) \frac{5 \cos^2 60^\circ + 4 \sec^2 30^\circ - \tan^2 45^\circ}{\sin^2 30^\circ + \cos^2 30^\circ}$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.2 - Q 2**

Choose the correct option and justify your choice : (i)  $\frac{2 \tan 30^\circ}{1 + \tan^2 30^\circ}$

(a)  $\sin 60^\circ$  (b)  $\cos 60^\circ$

(c)  $\tan 60^\circ$  (d)  $\sin 30^\circ$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.2 - Q 3**

If  $\tan(A + B) = \sqrt{3}$  and  $\tan(A - B) = \frac{1}{\sqrt{3}}$ ;

$0^\circ \leq A + B$

$\leq 90^\circ$  and  $0^\circ \leq B$ ,

find A and B.

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.2 - Q 4**

State whether the following are true or false. Justify your answer. (i)

$\sin(A + B) = \sin A$

$+ \sin B$

(ii) The value of  $\sin \theta$  increases as  $\theta$  increases. (iii) The value of  $\cos \theta$  increases as  $\theta$  increases. (iv)  $\sin \theta = \cos \theta$  for all  $\theta$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.3 - Q 1**

Evaluate : (i)  $\frac{\sin 18^\circ}{\cos 72^\circ}$  (ii)  $\frac{\tan 26^\circ}{\cot 64^\circ}$  (iii)  $\cos 48^\circ - \sin 42^\circ$  (iv)  $\operatorname{cosec} 31^\circ \operatorname{sec} 59^\circ$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.3 - Q 2**

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Show that :

$$(i) \quad \tan 48^\circ \tan 23^\circ \tan 42^\circ \tan 67^\circ = 1$$

$$(ii) \quad \cos 38^\circ \cos 52^\circ \cos 38^\circ \cos 52^\circ = 0$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.3 - Q 3**

If  $\tan 2A = \cot(A - 18^\circ)$ , where  $2A$  is an acute angle, find the value of  $A$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.3 - Q 4**

If  $\tan A = \cot B$ , prove that  $A + B = 90^\circ$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.3 - Q 5**

If

$\sec 4A = \operatorname{cosec}(A - 20^\circ)$ , where  $4A$  is an acute angle, find the value of  $A$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.3 - Q 6**

If  $A$ ,  $B$  and  $C$  are interior angles of a triangle  $ABC$ , then show that

$$\sin\left(\frac{B+C}{2}\right) = \frac{\cos A}{2}$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.3 - Q 7**

Express  $\sin 67^\circ + \cos 75^\circ$  in terms of trigonometric ratios of angles between  $0^\circ$  and  $45^\circ$ .

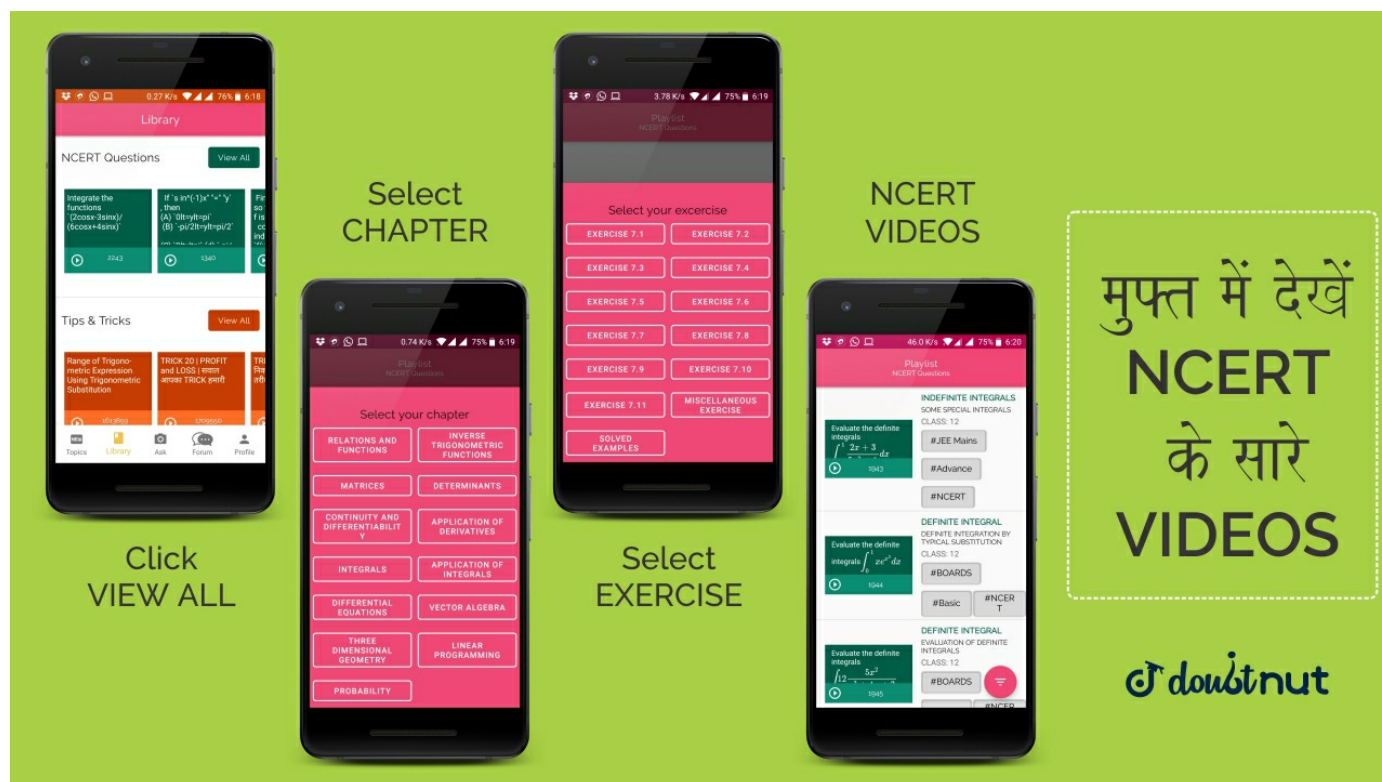
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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 1**

Express the trigonometric ratios  $\sin A$ ,  $\sec A$  and  $\tan A$  in terms of  $\cot A$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 2**

Write all the other trigonometric ratios of  $\angle A$  in terms of  $\sec A$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 3**

25

Evaluate: (i)  $\frac{\sin^2 63 + \sin^2 27}{\cos^2 17 + \cos^2 73}$  (ii)  
 $\sin 25^\circ \cos 65^\circ$   
 $25 \sin 65^\circ$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 4**

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Choose the correct option. Justify your choice. (i)  
 $9 \sec^2 A - 9 \tan^2 A$   
 $=$   
(a) 1 (b) 9 (c) 8 (d) 0

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

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Prove the following identity, where the angles involved are acute angles for which the expressions are defined.  
 $\frac{\cos A - \sin A + 1}{\cos A + \sin A - 1}$   
 $= \sec A + \cot A$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

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Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (iv)  
 $\frac{1 + \sec A}{\sec A}$   
 $= \frac{\sin^2 A}{1 - \cos A}$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the

29

expressions are defined. (ix)

$$(\sec A - \cos A)$$

$$= \frac{1}{\tan A + \cot A}$$

$$= \frac{1}{\tan A + \cot A}$$

$$= \frac{1}{\tan A + \cot A}$$

[Hint : Simplify LHS and RHS separately]

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (viii)

$$(\sin A + \operatorname{cosec} A)^2$$

$$+ (\cos A + \sec A)^2$$

$$= 7 + \tan^2 A$$

$$+ \cot^2 A$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (x)

$$\left( \frac{1 + \tan^2 A}{1 + \cot^2 A} \right)$$

$$= \left( \frac{1 - \tan A}{1 - \cot A} \right)^2$$

$$= \tan^2 A$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (iii)

$$\frac{\tan \theta}{1 - \cot \theta} + \frac{\cot \theta}{1 - \tan \theta} = 1$$
$$+ \sec \theta \operatorname{cosec} \theta$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (ii)

$$\frac{\cos A}{1 + \sin A} + \frac{1 + \sin A}{\cos A} = 2 \sec A$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (vii)

$$\frac{\sin \theta - 2 \sin^3 \theta}{2 \cos^3 \theta - \cos \theta} = \tan \theta$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (i)

$$(\operatorname{cosec} \theta - \cot \theta)^2 = \frac{1 - \cos \theta}{1 + \cos \theta}$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - EXERCISE 8.4 - Q 5**

Prove the following identity, where the angles involved are acute angles for which the expressions are defined. (vi)

$$\sqrt{\frac{1 + \sin A}{1 - \sin A}} = \sec A + \tan A$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 1**

Given  $\tan A = \frac{4}{3}$ , find the other trigonometric ratios of the angle A.

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 2**

If  $\angle B$  and  $\angle Q$  are acute angles such that  $\sin B = \sin Q$ . Then prove that  $\angle B = \angle Q$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 3**

Consider  $\triangle ACB$ , right-angled at C, in which  $AB = 29$  units,  $BC = 21$  units and  $\angle ABC = \theta$ . Determine the values of (i)  $\cos^2 \theta + \sin^2 \theta$  (ii)  $\cos^2 \theta \sin^2 \theta$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 4**

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In a right triangle ABC right-angled at B. if  $\tan A = 1$ , then verify that  $2 \sin A \cos A = 1$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 5**

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In  $\triangle OPQ$ , right-angled at P,  $OP = 7 \text{ cm}$  and  $OQ - PQ = 1 \text{ cm}$   
Determine the values of  $\sin Q$  and  $\cos Q$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 6**

42

In  $\triangle ABC$ , right-angled at B,  $AB = 5 \text{ cm}$  and  $\angle ACB = 30^\circ$  (see figure). Determine the lengths of the sides BC and AC.

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 7**

43

In  $\triangle PQR$ , right-angled at Q (see figure),  $PQ = 3 \text{ cm}$  and  $PR = 6 \text{ cm}$

. Determine  $\angle QPR$  and  $\angle PRQ$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 8**

If  
 $\sin(A - B) = \frac{1}{2}$ ,  
 $\cos(A + B) = \frac{1}{2}$ ,  
 $0^\circ < (A + B) \leq 90^\circ$ ,  
 $A > B$ , find A and B.

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 9**

Evaluate  $\frac{\tan 65^\circ}{\cot 25^\circ}$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 10**

If  
 $\sin 3A = \cos(A - 26^\circ)$ ,  
where  $3A$  is an acute angle, find the value of A.

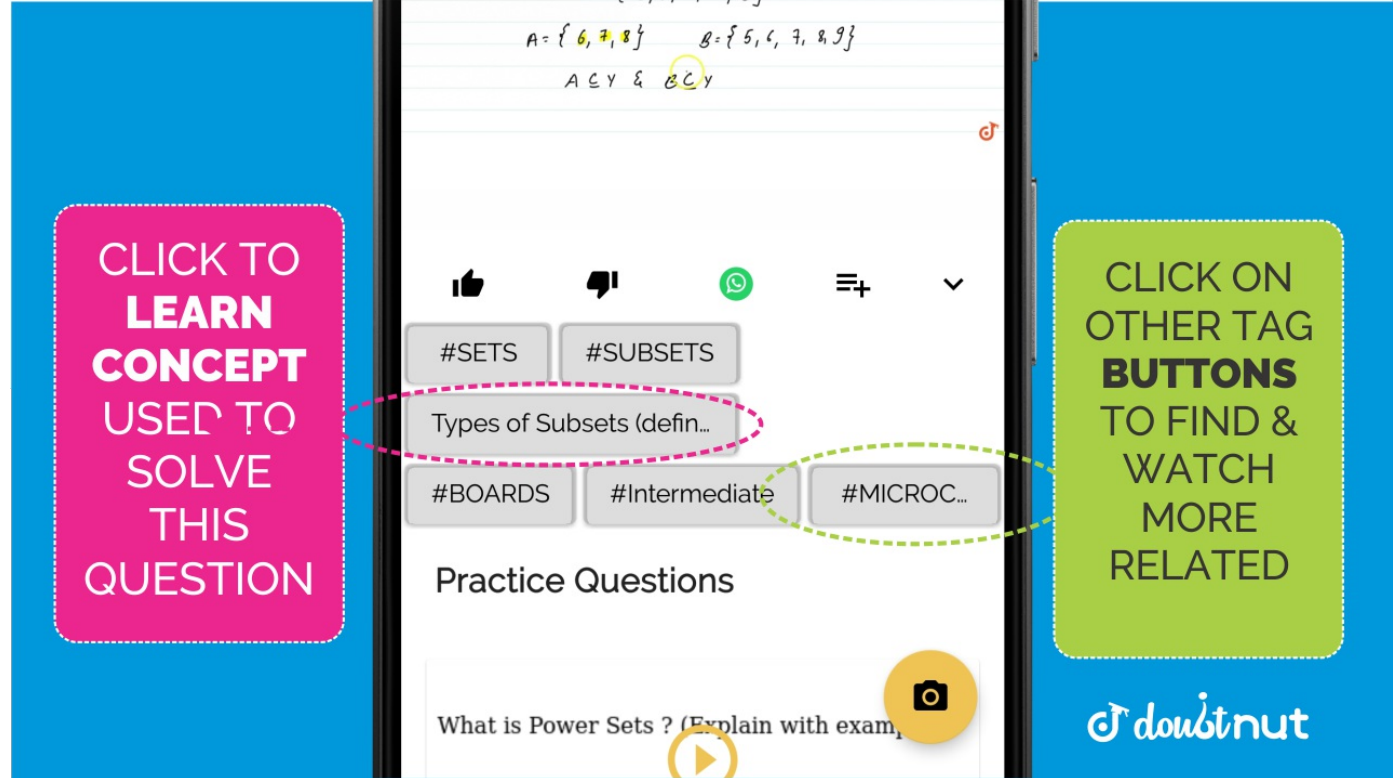
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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 11**

Express  $\cot 85^\circ + \cos 75^\circ$  in terms of trigonometric ratios of angles between  $0^\circ$  and  $45^\circ$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 12**

Express the ratios  $\cos A$ ,  $\tan A$  and  $\sec A$  in terms of  $\sin A$ .

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 13**

Prove that  

$$\sec A (1 - \sin A)(\sec A + \tan A) = 1$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 14**

Prove that  

$$\frac{\cot A - \cos A}{\cot A + \cos A} = \frac{\csc A - 1}{\csc A + 1}$$

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**NCERT - CLASS 10 - CHAPTER 8 INTRODUCTION TO TRIGONOMETRY - SOLVED EXAMPLES - Q 15**

Prove that  

$$\frac{\sin \theta - \cos \theta + 1}{\sin \theta + \cos \theta - 1} = \frac{1}{\sec \theta - \tan \theta}$$

, using the identity  $\sec^2 \theta = 1 + \tan^2 \theta$

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