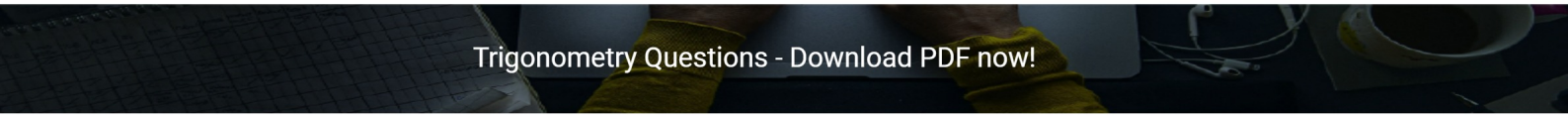

Trigonometry questions are a major type of questions asked in competitive exams. These questions carry a weightage of 3-4 questions (6-8 marks) in SSC exams. To get a good rank in competitive exams, you should have a great practice of a variety of trigonometry questions

Here are some tips for solving Trigonometry questions: Clear the basic concepts, Memorise the key ratios, Memorise the identities and formulas, practice a variety of questions, and crack the question you should have a great understanding and practice.

So, we have attached 10 questions of Trigonometry for you to practice with. You should aim to solve these questions in less than half a minute for each.

Practice Questions on Trigonometry

You can also download the Trigonometry questions and answers pdf. Just click on the **Download PDF** button. So let's start with the very first question.

Q:1 If $\text{cosec}\ \theta + \cot\ \theta = 2$, then find the value of $\text{cosec}\ \theta$.

1. (5/7)

2. (5/3)

3. (5/4)

4. (5/9)

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) This was an easy one! Did you get it right?

Q:2 If $\sin(A + B) = 1$ and $\cos(A - B) = (\sqrt{3}/2)$, where $90^o \geq A > B > 0^o$ then find the value of tan 'A'.

1. 0

2. 6

3. $\sqrt{3}$

4. $\sqrt{7}$

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) In these questions, keep in mind the range of angle given in the question!

Q:3 If $\text{cosec}\ A = (25/7)$, then find the value of sec A.

1. (27/13)

2. (25/24)

3. (29/17)

4. (29/17)

(**Difficulty:** 2, **Estimated Time:** 10 Seconds) Do you remember some Pythagorean triplets?

Q:4 Find the value of:

$\sqrt{\frac{1+\cos A}{1-\cos A}} \times \sqrt{1-\cos^2 A}$

1. 1 - sin A

2. 1 - cos A

3. 1 + cos A

4. 1 + sin A

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) Should we increase the level?

Q:5 If sin θ + cos θ = √5 sin(90° − θ), then find the value of cot θ

1. 1

2. {(√5 − 1)/4}

3. (√3 + 4)

4. {(√5 + 1)/4}

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) We're halfway through. Have you got all your questions correct so far?

Q:6 If cotx − tanx = 3, then find the value of (cotx + tanx).

1. 12

2. √13

3. 7

4. √11

(**Difficulty:** 4, **Estimated Time:** 30 Seconds) This was a test of your concepts!

Q:7 If $\tan^2\theta = 1 - a^2$, then find the value of $\sec\theta + \tan^3\theta\operatorname{cosec}\theta$

1. $(2 + a^2)^{(3/2)}$

2. $(1 - a^2)$

3. $(2 - a^2)^{(3/2)}$

4. $(1 + a^2)$

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) This was a hard nut to crack, be prepared for such questions in exam!

Q:8 Find the value of cot 24^o cot 36^o cot 48^o cot 60^o cot 42^o cot 54^o cot 66^o

1. $1/\sqrt{2}$

2. $1/\sqrt{3}$

3. $1/\sqrt{7}$

4. $1/\sqrt{5}$

(**Difficulty:** 2, **Estimated Time:** 15 Seconds) Another easy one!

Q:9 If cosec A – cot A = (1/5), then find the value of tan A.

1. 5/12

2. 2/7

3. 3/19

4. 13/23

(**Difficulty:** 3, **Estimated Time:** 20 Seconds) Yes, You know how to solve such questions!

Q:10 If sin A = (4/5) and sin B = (12/13), then find the value of sin (A – B).

1. –(9/69)

2. (11/112)

3. –(16/65)

4. (14/63)

(**Difficulty:** 2, **Estimated Time:** 15 Seconds) Do you remember the formulas?

Answer Key

Let's check out your score in this test.

1. (3)	**2.** (3)	**3.** (2)	**4.** (3)	**5.** (4)
6. (2)	**7.** (3)	**8.** (2)	**9.** (1)	**10.** (3)

Comment below your score, considering each question has 1 mark only. If you scored 8 to 10, congratulations! You are one step closer to selection. If you have scored 5 to 8 marks, then you are doing well, keep it up. If you have scored less than 5 marks then you need to work a little harder on this subject. But don't worry, we are here to help you master the subject.

Let's check the answers and solutions and try to find out what went wrong.

Answers and Solutions

Q:1 The correct answer is **option 3** i.e. **5/4**

Given = $\text{cosec}\ \theta + \cot\theta = 2$

We know, $\text{cosec}^2\theta - \cot^2\theta = 1$ ..... (I)

Or, $(\text{cosec}\ \theta + \cot\theta) \times (\text{cosec}\ \theta - \cot\theta) = 1$

Or, $\text{cosec}\ \theta - \cot\theta = (1/2)$ ..... (II)

On adding equations (I) and (II), we have;

$2\ \text{cosec}\ \theta = 2 + (1/2)$

So, $\text{cosec}\ \theta = (5/4)$

Q:2 The correct answer is **option 3** i.e. **√3**

$\sin(A + B) = \sin 90^\circ$

So, $A + B = 90^\circ$ ..... (I)

Also, $\cos(A - B) = \cos 30^\circ$

So, $A - B = 30^\circ$ ..... (II)

On adding equation (I) and (II), we have;

$2A = 120^\circ$

So, $A = 60^\circ$

So, tanA = tan60° = √3

Q:3 The correct answer is **option 2** i.e. **25/24**

cosecθ = (Hypotenuse/perpendicular)

secθ = (Hypotenuse/base)

$Base^2 = Hypotenuse^2 - Percendicular^2$

$Base^2 = 25^2 - 7^2$

$Base^2 = \sqrt{576} = \pm 24$ (Since, the length cannot be negative therefore, we will take the positive root only)

So, secA = (hypotenuse/base) = (25/24)

Q:4 The correct answer is **option 3** i.e. **1 + cos A**

Q:5 The correct answer is **option 4** i.e. **{(√5 + 1)/4}**

Given,

$$\sin\theta + \cos\theta = \sqrt{5}\sin(90-\theta),$$
$$= \sin\theta + \cos\theta = \sqrt{5}\cos\theta$$
$$\text{Or, } \sin\theta = (\sqrt{5}-1)\cos\theta$$
$$\text{Or, } \tan\theta = (\sqrt{5}-1)$$
$$\cot\theta = \frac{1}{\sqrt{5}-1}$$
$$\cot\theta = \frac{1}{\sqrt{5}-1} \times \frac{\sqrt{5}+1}{\sqrt{5}+1}$$
$$\cot\theta = \frac{\sqrt{5}+1}{5-1}$$

$\cot x - \tan x = 3$ Let $\cot x = y$ Then, $\tan x = (1/y)$

Given, $y - \frac{1}{y} = 3$

Squaring on both sides,

$$\left(y - \frac{1}{y}\right)^2 = 3^2$$

$$\text{Or, } y^2 + \frac{1}{y^2} - 2 = 9$$

$$y^2 + \frac{1}{y^2} + 2 = 9 + 4 = 13$$

$$\left(y + \frac{1}{y}\right) = \sqrt{13}$$

tanx + cotx = √13

Q:7 The correct answer is **option 3** i.e. **$(2 - a^2)^{(3/2)}$**

We have,

$tan^2\theta = 1 - a^2$ So, $1 + \tan^2\theta = 1 - a^2 + 1$ Or, $\sec^2\theta = \left(2 - a^2\right)$ So,

$\sec\theta + \tan^3\theta \operatorname{cosec}\theta = \sec^3\theta = \left(2 - a^2\right)^{\frac{3}{2}}$

Q:8 The correct answer is **option 2** i.e. **1/√3**

cot 24° cot 36° cot 48° cot 60° cot 42° cot 54° cot 66°

= (cot 24° × cot 66°) × (cot 36° × cot 54°) × (cot 48° × cot 42°) × cot 60°

= 1 × 1 × 1 × (1/√3) ..... Since cot θ × cot (90° – θ) = 1

We know that, $\text{cosec}^2 A - \cot^2 A = 1$

So, $\text{cosec } A + \cot A = (\text{cosec}^2 A - \cot^2 A) \div (\text{cosec } A - \cot A)$

Or, $\text{cosec } A + \cot A = 1 \div (1/5) = 5$ – [II]

Subtracting [I] from [II],

We have, $\text{cosec } A + \cot A - (\text{cosec } A - \cot A) = 5 - (1/5)$

Or, $2\cot A = (24/5)$

Or, $\cot A = (24/5) \div 2 = (12/5)$

So, $\tan A = (5/12)$

Q:10 The correct answer is **option 3** i.e. **–(16/65)**

Given, $\sin A = (4/5)$

So, perpendicular = 4 and hypotenuse = 5

So, base = $\sqrt{(5^2 - 4^2)} = 3$

So, $\cos A = (3/5)$

Given, $\sin B = (12/13)$

So, perpendicular = 12 and hypotenuse = 13

So, base = $\sqrt{(13^2 - 12^{2)}} = 5$

So, $\cos B = (5/13)$

$\text{Sin } (A - B) = \text{sinAcosB} - \text{cosAsinB}$

$= (4/5) \times (5/13) - (3/5) \times (12/13)$

$= (20/65) - (36/65)$

$= -(16/65)$

So, this is it for today. We will meet again with another new topic. Till then, you can practice the questions again by downloading the PDF of Trigonometry.