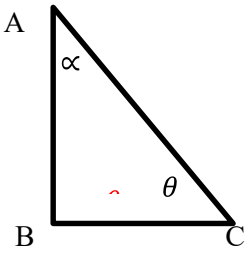
UNIT-9: TRIGONOMETRY

1) 

Ans: $\frac{AB}{AC}$

1. In this figure if θ is acute angle the ratio of the sides as sin θ=
2. In this figure if θ is acute angle, inverse of cosec θ interms of the ratio of the sides is
3. In the figure if $\propto$ is acute angle, then the cos$\propto$ interms of the ratio of the sides
4. In this figure if $\propto$ is acute angle, inverse of sec $\propto$ interms of the ratio of the sides is

2) Ans: tanθ

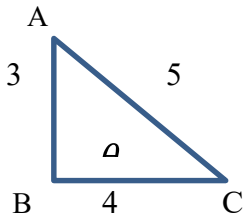
1. In right angled triangle the ratio of the opposite side to the adjacent side is
2. cot(90 - θ)=-----
3. $\frac{sin\theta}{cos\theta}$=-----
4. Inverse of cot θ=-----
5. Reciprocal of $\frac{cos\theta}{sin\theta}$= -----
6. Supplementary angle of cot θ is-----

3) Ans: 1

1. $\tan 45^{\circ}=$
2. $\sin 90^{0}=$
3. $\operatorname{cosec} 90^{0}=$
4. $\cos 0=$
5. $\sec 0=$
6. $\sin^{2}\theta+\cos^{2}\theta=$
7. $\operatorname{cosec}^{2}\theta-\cot^{2}\theta=$
8. $\sin 30^{0}+\cos 60^{0}=$
9. $\sin 45^{0} \times \operatorname{cosec} 45^{0}=$
10. $\tan 30^{0} \times \tan 60^{0}=$
11. $\cot 60^{0} \times \cot 30^{0}=$
12. $\sin 90^{0}+\cos 90^{0}=$
13. $\sin 0^{0}+\cos 0^{0}=$
14. $\tan 45^{0} \times \cot 45^{0}=$
15. $\frac{sin30^{0}}{cos60^{0}}=$
16. $\frac{cos60^{0}}{sin30^{0}}=$
17. $\frac{sin45^{0}}{cos45^{0}}=$
18. $\frac{cos45^{0}}{sin45^{0}}=$
19. $\frac{sin90^{0}}{cos0^{0}}=$
20. $\frac{cos0^{0}}{sin90^{0}}=$
21. $\frac{tan30^{0}}{cot60^{0}}=$
22. $\frac{tan60^{0}}{cot30^{0}}=$
23. $\sin\theta=\frac{8}{10}$ then $\sin^{2}\theta+\cos^{2}\theta=$

4) Ans: $\frac{5}{3}$

1. If $\sin\theta=\frac{3}{5}$ then $\operatorname{cosec}\theta=$
2. If $\sin\theta=\frac{3}{5}$ then inverse of $\cos(90-\theta)=$
3. If $\cos\theta=\frac{4}{5}$ then $\operatorname{cosec}\theta=$
4. If $\tan\theta=\frac{3}{4}$ then $\operatorname{cosec}\theta=$
5. If $\cot\theta=\frac{4}{3}$ then $\operatorname{cosec}\theta=$

6. 

Angle ACB = θ in this figure cosec θ =

5) Ans: 45^0

1. If tan θ=1then θ =
2. If cot θ =1 then θ =
3. If $\sqrt{2}$ sin θ =1 then θ =
4. 2cos θ =$\sqrt{2}$ then θ=
5. If tan(A+B)=N,D and tan(A-B)=0 then A=
6. If cot(A+B)=0 and cot(A-B)= N.D. then A=
7. If sin2A=1 then A =
8. If cos2A=0 then A=
9. If cosec2A=1 then A=
10. If cot2A=0 then A=

6) Ans: $\frac{8}{10}$

1. If tan θ = $\frac{8}{6}$ then sin θ=
2. If cosec θ = $\frac{10}{8}$ then sinθ=
3. If cot θ = $\frac{6}{8}$ then sinθ=
4. If cosθ = $\frac{6}{10}$ then sinθ=
5. If secθ = $\frac{10}{6}$ then sinθ =
6. If sinθ = $\frac{4}{5}$ then if the sides of the triangle the two times of the Pythagorean triplet of given triangle then the sinθ of obtained triangle is-------

7. If $\text{cosec}\theta=\frac{5}{4}$ then if the sides of the triangle the two times of the Pythagorean triplet of given triangle then the inverse of $\text{cosec}\theta$ of obtained triangle is

8. If $\sin\theta=\frac{4}{5}$ then if the sides of the triangle the two times of the Pythagorean triplet of given triangle then the cos (90-θ) of obtained triangle is

9. If $\text{cosec}\ \theta = \frac{10}{8}$ then cos(90-θ)=

10. If $\tan\theta = \frac{8}{6}$ then cos(90-θ)=

7) Ans: $\frac{7}{25}$

1. If 3cotA=4 then find the find the value of $\frac{1-tan^2\ A}{1+tan^2\ A}$

2. If 3cotA=4 then the find the value of $\cos^2$ A-$\sin^2$ A

3. 3cotA=4 then find the find the value of $\frac{1}{sec^2\ A}$ - $\frac{1}{cosec^2\ A}$

8) Ans: 1

1. If $A=60^0$ $B=30^0$ then find the value of

a) sinA cosB+sinB cosA

b) sin(A+B) +cos(A+B)

c) sin(A-B)+cosA

d) sinA cosecA

e) cosB secB

f) tanA tanB

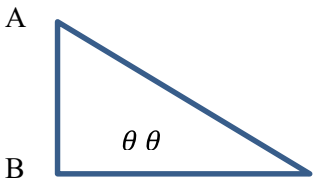
g) cotA cotB

h) tanA cot(90-B)

i) sinA.sin(90-B) + cosA.cos(90-B)

9) Ans: 1

In triangle ABC angle B=90^0, θ is acute angle and $AC^2=AB^2+BC^2$



find the value of

1. $\sin^2\theta + \cos^2\theta$
2. $\sec^2\theta - \tan^2\theta$
3. $\text{cosec}^2\theta - \cot^2\theta$
4. $\sin^2(90-\theta) + \cos^2(90-\theta)$
5. $\frac{1}{cosec^2\theta} + \frac{1}{sec^2\theta}$

10) Ans: 0

1. $\sin30^0-\cos60^0$
2. $\sin90^0-\cos0^0$
3. $\tan45^0 - \cos45^0$
4. $\sin60^0 - \cos30^0$
5. $\sin30^0 \cos90^0$
6. $\text{cosec}30^0 - \sec(90-30)$

11) Ans: $\sin\theta$

1. $\frac{opp}{hyp} =$
2. $\cos(90-\theta)=$
3. $\cos\theta \times \tan\theta=$
4. $\frac{1}{cosec\theta} =$
5. $\cos\theta \times \frac{1}{cot\theta} =$

12) Ans: 1

Find the values of :

1. $\frac{sin18^0}{cos72^0}$
2. $\tan48^0 \times \tan42^0$
3. $\frac{sec26^0}{cosec64^0}$
4. $\sin20^0 \cos70^0 + \cos20^0 \sin70^0$
5. $\text{Sin}20^0 \sec70^0$
6. $\sec30^0 \text{cosec}60^0 - \tan30^0 \cot60^0$

13) Ans: 0

Find the values of:

1. $\cos38^0 \cos52^0 - \sin38^0 \sin52^0$
2. $\sin42^0 - \cos48^0$
3. $\tan26^0 - \frac{1}{tan64^0}$
4. $(\sin^2 20^0 + \sin^2 70^0)$
5. $\tan48^0 \times \tan42^0 - \tan23^0 \times \tan 67^0$
6. $(\sin^2 63^0 + \sin^2 27^0) - (\cos^2 17^0 + \cos^2 73^0)$

14) Ans: 36^0

Find the value of A in each case:

1. $\tan2A = \cot(A-18^0)$
2. $\sin2A = \cos(A-18^0)$
3. $\text{cosec}2A = \sec(A-18^0)$
4. $\tan2A = \frac{1}{tan(A-18^0)}$
5. $\frac{1}{cosec2A} = \cos(A-18^0)$

15) Ans: $A=45^0, B=15^0$

Find the values of A and B in following cases:

1. $\tan(A+B)=\sqrt{3}, \ \tan(A-B)=\frac{1}{\sqrt{3}}$
2. $\sin(A+B)=\frac{\sqrt{3}}{2}, \sin(A-B)=\frac{1}{2}$
3. $\cos(A+B)=\frac{1}{2}, \cos(A-B)=\frac{\sqrt{3}}{2}$

16) Ans: sinA.cosA

Prove the following:

1. $(\text{cossec}A-\sin A)(\sec A-\cos A) = \sin A.\cos A$
2. $\frac{1}{tanA+cotA} = \sin A.\cos A$

17) Ans: $\tan^2 A$

Prove the following:

1. $\frac{1+tan^2A}{1+cot^2A} = \tan^2 A$
2. $(\frac{1-tanA}{1+cotA})^2 = \tan^2 A$
3. $(\sec A+1)(\sec A-1) = \tan^2 A$
4. $\frac{1-cos^2A}{cos^2A} = \tan^2 A$
5. $(1-\cos^2 A)(\sec^2 A)$

18) Ans: $(7+\tan^2 A+\cot^2 A)$

Prove the following:

1. $(\sin A+\operatorname{cosec} A)^2+ (\cos A+\sec A)^2 = (7+\tan^2 A+\cot^2 A)$
2. $5 +\sec^2 A+\operatorname{cosec}^2 A = (7+\tan^2 A+\cot^2 A)$
3. $5+\frac{1}{cos^2A} + \frac{1}{sin^2A} = (7+\tan^2 A+\cot^2 A)$