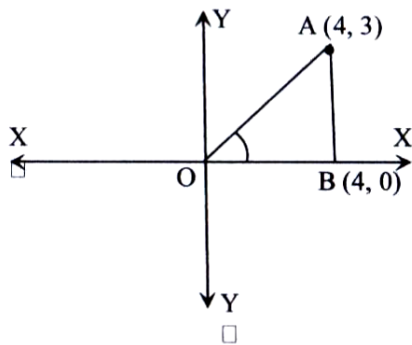


**Work Sheet for Class – Ten**  
**(Girls and Boys)**  
**Chapter- Eight**  
**Exercise-8.2**  
**Trigonometry**

**Creative Multiplication Choice Questions**

1.



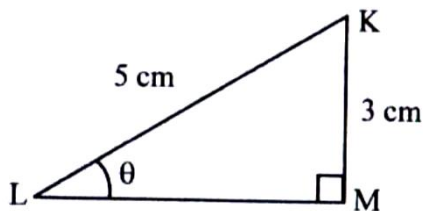
**Cosec(- θ) + sec(- θ) = What? [D.B.- 19]**

- |                    |                     |
|--------------------|---------------------|
| a) $-\frac{5}{12}$ | b) $-\frac{35}{12}$ |
| c) $\frac{1}{5}$   | d) $\frac{7}{5}$    |

2.  **$\sin\left(\frac{25\pi}{2} - \theta\right)$  is in which quadrant? [R.B.- 19]**

- |          |           |
|----------|-----------|
| a) First | b) Second |
| c) Third | d) Foruth |

3.



**According to the above figure then what is the value of  $\tan\theta \cos\theta$ ? [S.B.- 19]**

- |                    |                    |
|--------------------|--------------------|
| a) $\frac{3}{5}$   | b) $\frac{15}{16}$ |
| c) $\frac{16}{15}$ | d) $\frac{5}{3}$   |

4. **What is the value of  $\cos(120^\circ)$ ? [S.B.- 19]**

- |                          |                         |
|--------------------------|-------------------------|
| a) $-\frac{\sqrt{3}}{2}$ | b) $-\frac{1}{2}$       |
| c) $\frac{1}{2}$         | d) $\frac{\sqrt{3}}{2}$ |

5. **If  $\tan\theta = 1$  then – S.B.- 19]**

- i.  $\sin\theta + \frac{1}{\sec\theta} = \sqrt{2}$
- ii.  $\sin^2\theta + \cot^2\theta = \frac{3}{2}$

iii.  $\sec(-\theta) + \operatorname{cosec}(-\theta) = 2\sqrt{2}$

**Which one of the following is correct?**

- |               |                  |
|---------------|------------------|
| a) i and ii   | b) i and iii     |
| c) ii and iii | d) i, ii and iii |

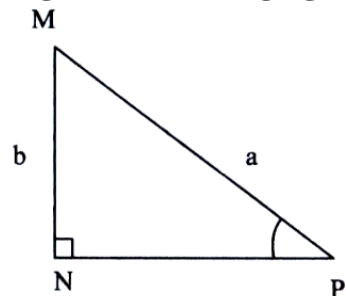
6. **In which quadrant the angle  $-785^\circ$  lie? [J.B.- 19]**

- |          |           |
|----------|-----------|
| a) First | b) Second |
| c) Third | d) Foruth |

7. **If  $\cos\theta = \frac{4}{5}$  then find the value of  $\tan\theta$ ? [B.B.- 19]**

- |                  |                  |
|------------------|------------------|
| a) $\frac{3}{5}$ | b) $\frac{3}{4}$ |
| c) $\frac{5}{4}$ | d) $\frac{5}{3}$ |

**Answer to the questions no. (8 – 9) in according to the following figure:**



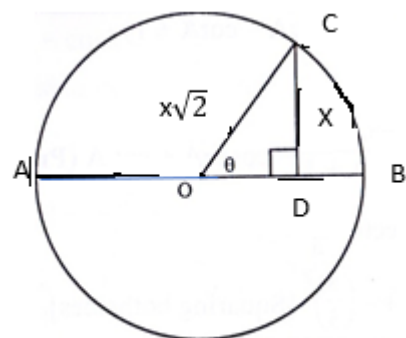
8.  **$\sin P + \cos M =$  What? [C.B.- 19]**

- |                                     |                                     |
|-------------------------------------|-------------------------------------|
| a) $\frac{2b}{a}$                   | b) $\frac{2a}{b}$                   |
| c) $\frac{b + \sqrt{a^2 - b^2}}{a}$ | d) $\frac{a + \sqrt{a^2 - b^2}}{a}$ |

9. **What is the value of  $\tan M$ ? [C.B.- 19]**

- |                                 |                                 |
|---------------------------------|---------------------------------|
| a) $\frac{b}{\sqrt{a^2 - b^2}}$ | b) $\frac{a}{\sqrt{a^2 - b^2}}$ |
| c) $\frac{\sqrt{a^2 - b^2}}{b}$ | d) $\frac{\sqrt{a^2 - b^2}}{a}$ |

10.



**In the diagram then – [B.B.- 19]**

- i. In triangle DOC,  $DO = x$ .
- ii.  $AB = 2x$
- iii.  $\theta = \frac{\pi}{4}$

**Which one of the following is correct?**

- |             |              |
|-------------|--------------|
| a) i and ii | b) i and iii |
|-------------|--------------|

11.  $\cos^2 \frac{\pi}{3} - \sin^2(-\frac{\pi}{3}) = \text{What?}$  [B.B.- 19]

- a)  $-\frac{1}{2}$                       b)  $-\frac{1}{4}$   
 c)  $\frac{1}{2}$                          d) 1

12.  $\cos\theta = \frac{1}{2}, \pi < \theta < 2\pi$  then what is the value of  $\theta$ ? [All B.- 18]

- a)  $\frac{\pi}{3}$                             b)  $\frac{4\pi}{3}$   
 c)  $\frac{5\pi}{3}$                             d)  $\frac{11\pi}{6}$

13. What is the value of  $\cos(\frac{-31\pi}{3})$ ? [D.B.- 17]

- a) 1                                b)  $\frac{\sqrt{3}}{2}$   
 c)  $\frac{1}{2}$                               d)  $\frac{1}{\sqrt{2}}$

14. If  $\cos\theta = \frac{1}{\sqrt{2}}$  then — [D.B.- 17]

- i.  $\sec^2 \theta = 2$   
 ii.  $\sin^2 \theta = \frac{1}{2}$   
 iii.  $\tan^2 \theta = 1$

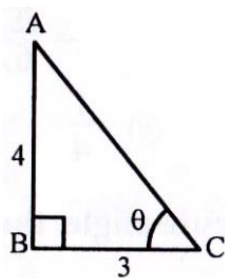
Which one of the following is correct?

- a) i and ii                      b) i and iii  
 c) ii and iii                    d) i, ii and iii

15. What is the value of  $\sin^2(2\pi - \frac{\pi}{6})$ ? [R.B.- 17]

- a)  $-\frac{1}{4}$                               b)  $-\frac{1}{2}$   
 c)  $\frac{1}{4}$                                 d)  $\frac{1}{2}$

16.



From the figure — [J.B.- 17]

- i.  $\tan\theta = \frac{4}{3}$   
 ii.  $\cos\theta = \frac{3}{5}$   
 iii.  $\sin^2 \theta = \frac{16}{25}$

Which one of the following is correct?

- a) i and ii                      b) i and iii  
 c) ii and iii                    d) i, ii and iii

17. If  $\theta = 30^\circ$  then — [J.B.- 17]

- i.  $\sin 2\theta = 2 \sin \theta \cdot \cos \theta$   
 ii.  $\sin^2 \theta + \cos^2 \theta = 1$

iii.  $\sec^2 \theta = 1 + \tan^2 \theta$

Which one of the following is correct?

- a) i and ii                      b) i and iii  
 c) ii and iii                    d) i, ii and iii

18. If  $A = 60^\circ$  and  $B = 30^\circ$  then- [J.B.- 17]

- i.  $\sin 2B = 2 \sin B \cdot \cos B$   
 ii.  $\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$   
 iii.  $\cos 2B = 2 \cos B - \sin B$

Which one of the following is correct?

- a) i and ii                      b) ii and iii  
 c) i and iii                    d) i, ii and iii

Answer to the questions no. (19 – 20) according to the given information.

$\sin A$  and  $\cos A$  are opposite in sign then where  $\sin A = -\frac{2}{\sqrt{5}}$ .

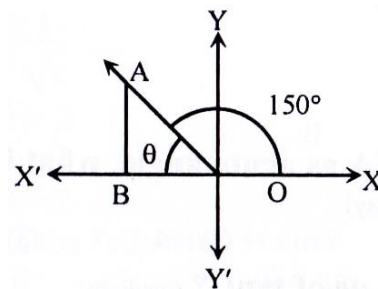
19. In which quadrant the angle A lie? [Dj.B.- 17]

- a) First                            b) Second  
 c) Third                            d) Fourth

20. What is the value of  $\tan A$ ? [Dj.B.- 17]

- a)  $-2$                                 b)  $-\frac{1}{2}$   
 c)  $\frac{1}{2}$                                 d) 2

Answer to the questions no. (20 – 21) from the following information:



21. What is the value of  $\theta$  in circular system? [C.B.- 17]

- a)  $\frac{\pi}{6}$                                 b)  $\frac{\pi}{4}$   
 c)  $\frac{\pi}{3}$                                 d)  $\frac{2\pi}{3}$

22. What is the value of  $\cos\theta \tan\theta$ ? [C.B.- 17]

- a)  $\frac{3}{2}$                                 b)  $\frac{1}{\sqrt{2}}$   
 c)  $\frac{\sqrt{3}}{2}$                               d)  $\frac{1}{2}$

Answer to the questions no. (23 – 24) to the information given below:

In  $\Delta ABC$ ,  $AB = AC = 5$  cm,  $AD \perp BC$  and  $BC = 6$  cm.

23. Area of  $\Delta ABC$  in square cm?  
[Ctg.B.- 17]

- a) 12                      b) 13  
c) 14                      d) 15

24. If the angle between AB and AD is  $\theta$  then  $\tan\theta =$  What? [Ctg.B.- 17]

- a)  $\frac{3}{4}$                       b)  $\frac{2}{3}$   
c)  $\frac{1}{2}$                       d)  $\frac{1}{3}$

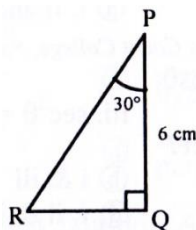
25. If  $\cos\theta = \frac{4}{5}$  and  $\theta$  is acute angle then  $\operatorname{cosec}\theta =$ ? [Ctg.B.- 17]

- a)  $\frac{3}{5}$                       b)  $\frac{2}{5}$   
c)  $\frac{5}{3}$                       d)  $\frac{5}{2}$

26. If  $\sin 3A = \cos 3A$  then which one is the value of A? [Ctg.B.- 17]

- a)  $15^\circ$                       b)  $20^\circ$   
c)  $30^\circ$                       d)  $40^\circ$

27.



In figure then what is the length of PR? [S.B.- 17]

- a)  $2\sqrt{3}$  cm                      b)  $4\sqrt{3}$  cm  
c)  $6\sqrt{3}$  cm                      d) 12 cm

28. What is the value of  $\sec\left(2\pi - \frac{\pi}{4}\right)$ ? [S.B.- 17]

- a)  $-\sqrt{2}$                       b)  $-\frac{2}{\sqrt{3}}$   
c)  $\frac{2}{\sqrt{3}}$                       d)  $\sqrt{2}$

29. What is the value of  $\cos\left(-\frac{25\pi}{6}\right)$ ? [J.B.- 17]

- a)  $\frac{2}{\sqrt{3}}$                       b)  $\frac{\sqrt{3}}{2}$   
c)  $\frac{1}{2}$                       d)  $\frac{1}{\sqrt{2}}$

30. What is the value of  $\tan\left(\frac{-25\pi}{6}\right)$ ? [B.B.- 17]

- a) -1                      b)  $-\frac{1}{\sqrt{3}}$   
c)  $\frac{1}{\sqrt{3}}$                       d) 1

31. If  $\cos\theta = -\frac{1}{2}$  and  $\pi < \theta \leq \frac{3\pi}{2}$  then which one of the values of  $\tan\theta$ ?

[B.B.- 16]

- a)  $-\sqrt{3}$                       b)  $\frac{1}{\sqrt{3}}$   
c) 1                      d)  $\sqrt{3}$

32. When  $\cos\theta = \frac{\sqrt{3}}{2}$  then  $\sin 3\theta =$  What? [B.B.- 16]

- a) 0                      b)  $\frac{\sqrt{3}}{2}$   
c)  $\frac{1}{2}$                       d) 1

33. If  $\cos\alpha = -\frac{\sqrt{3}}{2}$  while  $\frac{\pi}{2} < \alpha < \pi$  then what is the value of  $\alpha$ ? [S.B.- 16]

- a)  $\frac{5\pi}{6}$                       b)  $\frac{2\pi}{3}$   
c)  $\frac{7\pi}{6}$                       d)  $\frac{4\pi}{3}$

34. If  $P = \frac{\pi}{4}$  and  $Q = \frac{3\pi}{4}$  then what is the value of  $\cos(P + Q)$ ? [C.B.- 16]

- a) -1                      b) 0  
c) 0.5                      d) 1

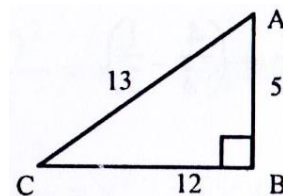
35. If  $\sec\theta + \tan\theta = 5$  then  $(\sec\theta - \tan\theta) =$  What? [R.B.- 15]

- a) -5                      b)  $-\frac{1}{5}$   
c)  $\frac{1}{5}$                       d) 5

36. What is the value of  $\theta$  in 4<sup>th</sup> quadrant if  $\operatorname{cosec}\theta = \frac{-2}{\sqrt{3}}$ ?

- a)  $-300^\circ$                       b)  $-60^\circ$   
c)  $60^\circ$                       d)  $300^\circ$

37.



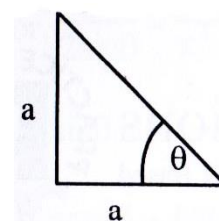
From the figure —

- i.  $\tan C = \frac{5}{12}$ .  
ii.  $\sin A = \frac{12}{13}$ .  
iii.  $\sin^2 A + \cos^2 C = \frac{288}{169}$ .

Which one of the following is correct?

- a) i and ii                      b) i and iii  
c) ii and iii                      d) i, ii and iii

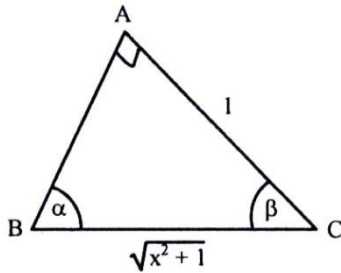
38.





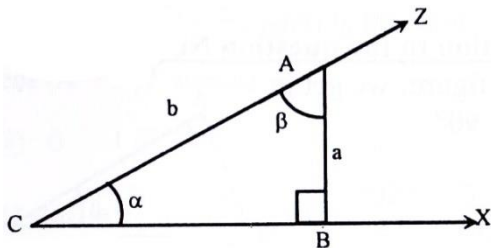
**Creative Questions:**

1.



- Find the value of  $\sin(\alpha + \beta) + \cos(\alpha + \beta)$ .
- Considering the stem prove that  $(\sin\alpha - \cos\alpha)^2 = 1 - 2\sin\alpha \cdot \cos\alpha$ .
- If  $x^2 + \frac{1}{x^2} = 2$  then find the value of  $\alpha$ .

2.

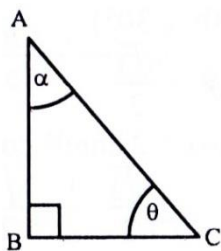


- Find the value of  $\sec\alpha$ .
- If  $a=1$  and  $b=2$ , then prove that  $\cos 3\beta = 4\cos^3\beta - 3\cos\beta$ .
- If  $a + \sqrt{b^2 - a^2}$ , then find the value of  $\beta$ .

3.  **$P = a\cos\theta$  and  $Q = b\sin\theta$ .**

- Find the value of  $\frac{P^2}{a^2} + \frac{Q^2}{b^2}$ .
- If  $P - Q = c$ , prove that,  $a\sin\theta + b\cos\theta = \pm\sqrt{a^2 + b^2 - c^2}$
- If  $a^2 = 3, b^2 = 7$  and  $Q^2 + P^2 = 4$ , prove that  $\tan\theta = \pm\frac{1}{\sqrt{3}}$

4.



- Find the quadrant, in which  $-700^\circ$  lie with figure.

- If  $\left(\frac{AC}{BC}\right)^2 + \left(\frac{AB}{BC}\right)^2 = \frac{5}{3}$  then find the value of  $\theta$
- According to the stem  $\sin 2\alpha = 2\sin\alpha \cdot \cos\alpha = \frac{2\tan\alpha}{1+\tan^2\alpha}$ .

5. **Given,  $A = \sec\theta - \tan\theta$**

- If  $\theta = \frac{\pi}{4}$ , what is the value of  $A^2 + 2A$ .
- Prove that,  $\sin\theta = \frac{1-A^2}{1+A^2}$
- Show that  $\frac{\sin\theta - \cos\theta + 1}{\sin\theta + \cos\theta - 1} = \frac{1}{A}$

6. **We have,  $\sin^2\alpha x + \cos^2\alpha x = 1$ , then-**

- What is the relation between  $\sin\theta$  and  $\tan\theta$ . And why  $(\sin\theta)^2 = \sin^2\theta$
- Prove that,  $\frac{\sin A + \cos A + 1}{\sin A - \cos A + 1} = \operatorname{cosec} A + \cot A$
- If  $\sec\theta = \frac{5}{3}$  and  $\tan\theta$  negative, the find the value of  $\frac{\operatorname{cosec}\theta - \cot\theta}{\operatorname{cosec}\theta + \cot\theta}$