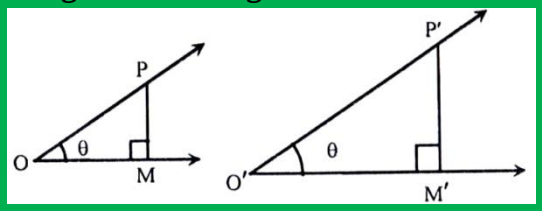
Final Work Sheet- 3
(Mathematics for Class- Nine)
Chapter- Nine
Exercise-9.1
Trigonometric Ratio

Creative Multiplication Choice Questions

Answer to the questions No. (1 – 2) using the following information:



The right-angled triangle POM and P'O'M' are similar.

1. **If $\sin\theta = x$ in ΔPOM then what is the value of $\cos\theta$ in $P'O'M'$?**

a) x b) $-x^2$

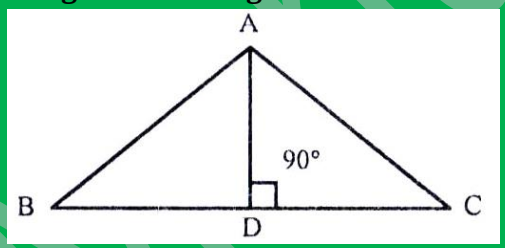
c) $\sqrt{x}$ d) $\sqrt{1-x^2}$

2. **Under which case they are similar?**

a) $\frac{OP}{O'P'} = \frac{PM}{O'M'}$ b) $\frac{OP}{O'P'} = \frac{P'M'}{OM}$

c) $\frac{OM}{O'M'} = \frac{PM}{P'M'}$ d) $\frac{PM}{O'M'} = \frac{OP}{O'M'}$

Answer to the questions No. (3 - 5) using the following information:



3. **If $\frac{AB}{BD} = \frac{AC}{CD}$ then which of the following is correct?**

a) $\Delta ABD = \Delta ACD$

b) ΔABD *and* ΔACD are similar.

c) $\Delta ABD < \Delta ACD$

d) $\Delta ABD > \Delta ACD$

4. **If ΔABD and ΔACD are similar then which of the following is correct?**

a) $AB = AC$ b) $AB.AC = AD^2$

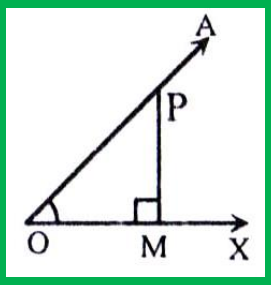
c) $AD^2 = \frac{AB}{AC}$ d) $AD^2 = \frac{AC}{AB}$

5. **$AB^2 - AC^2$ = What?**

a) BD^2 b) CD^2

c) $BD^2 - CD^2$ d) $CD^2 - BD^2$

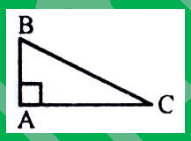
6.



In the figure besides, right angled ΔPOM Considering ∠XOA = θ then how many numbers are there for trigonometric ratio of angle θ?

a) 6 b) 5

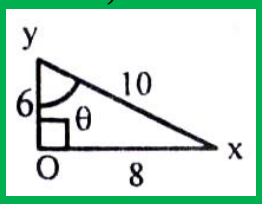
c) 4 d) 3

7. **If** 

and $\cos\theta = \frac{AB}{BC}$ then θ = What?

a) $\angle ABC$ b) $\angle ACB$

c) $\angle BAC$ d) $\angle ABC + \angle ACB$

8. **If the figure** 

and $\cot\theta$ = What?

a) $\frac{3}{4}$ b) $\frac{4}{3}$

c) $\frac{3}{5}$ d) $\frac{4}{5}$

9. **Which of the following condition is correct to construct angle of 45°?**

a) Perpendicular > Base

b) Base = Perpendicular

c) $Base < Perpendicular$

d) Base > Perpendicular

10. **Which of the following is the ratio of tangent of angle θ?**

a) $\frac{\text{Adjacen side}}{\text{Opposite side}}$

b) $\frac{\text{Opposite side}}{\text{Hypotenuse}}$

c) $\frac{\text{Hypotenuse}}{\text{Opposite side}}$

d) $\frac{\text{Opposite side}}{\text{Adjacent side}}$

11. Which of the following is the relation between $\sin\theta$ and $\text{cosec}\theta$?

a) $\sin\theta = \text{cosec}\theta$

b) $\sin\theta + \text{cosec}\theta = 1$

c) $\sin\theta . \text{cosec}\theta = 1$

d) $\frac{1}{\sin\theta} + \frac{1}{\text{cosec}\theta} = 1$

12. Which of the following is the value of $\tan\theta . \cot\theta . \cos\theta$?

a) $\frac{\text{Perpendicular}}{\text{Hypotenuse}}$ b) $\frac{\text{Perpendicular}}{\text{Base}}$

c) $\frac{\text{Hypotenuse}}{\text{Base}}$ d) $\frac{\text{Base}}{\text{Hypotenuse}}$

13. If opposite side, adjacent side and hypotenuse of right-angled triangle PMO arc PM, OM and OP—

i. $\sin\theta = \frac{\text{Opposite side}}{\text{Hypotenuse}} = \frac{\text{PM}}{\text{OP}}$

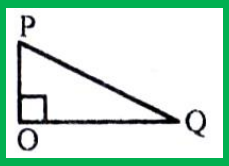
ii. $\cos\theta = \frac{\text{Adjacent side}}{\text{Hypotenuse}} = \frac{\text{OM}}{\text{OP}}$

iii. $\tan\theta = \frac{\text{Opposite side}}{\text{Adjacent side}} = \frac{\text{PM}}{\text{OM}}$

Which one of the following is correct?

a) i and ii b) i and iii

c) ii and iii d) i, ii and iii



14. If and $\tan\theta = \frac{OQ}{OP}$ then θ = What?

i. $\theta = \angle OPQ$

ii. $\cot\theta = \frac{OP}{OQ}$

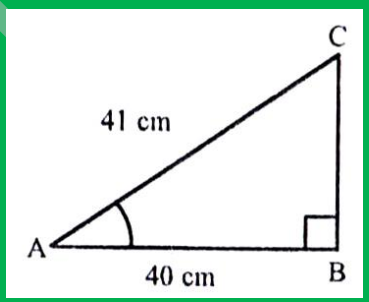
iii. $\tan\theta \cot\theta = 1$

Which one of the following is correct?

a) i and ii b) i and iii

c) ii and iii d) i, ii and iii

Answer to the questions (15 - 17) using the following figure:



15. What is the value of BC in cm?

a) 9 b) 29

c) 39 d) 49

16. What is the value of $\sin\angle BAC$?

a) $\frac{9}{40}$ b) $\frac{81}{40}$

c) $\frac{9}{41}$ d) $\frac{81}{41}$

17. What is the value of $\tan\angle BAC$?

a) $\frac{9}{40}$ b) $\frac{9}{41}$

c) $\frac{40}{41}$ d) $\frac{41}{40}$

18. If $\sin\theta = \frac{\sqrt{3}}{2}$ and $\sec\theta = 2$ then $\tan\theta$ = What?

a) $3\sqrt{3}$ b) $6\sqrt{2}$

c) $9\sqrt{2}$ d) $\sqrt{3}$

19. If $\sin\theta = \frac{\sqrt{3}}{2}$ and $\frac{1}{\cos\theta} = 2$ then $\tan\theta$ = What?

a) $3\sqrt{3}$ b) $6\sqrt{2}$

c) $9\sqrt{2}$ d) $\sqrt{3}$

20. If $\text{cosec}\theta = 2\sqrt{2}$ and $\cos\theta = \frac{1}{4\sqrt{2}}$ then what is the value of $\cot\theta$ = What?

a) 2 b) $\sqrt{2}$

c) 1 d) $\frac{1}{2}$

21. If $\sec\theta = \sqrt{x^2 + 1}$ then $\tan\theta$ = What?

a) X b) $\frac{1}{X}$

c) $x^2 - 1$ d) $\sqrt{x^2 - 1}$

22. Which of the following is the value of $\frac{\text{cosec}^2\theta}{\sec^2\theta}$?

a) $\tan^2\theta$ b) $\sec^2\theta$

c) $\sin^2\theta$ d) $\cot^2\theta$

23. Which of the following is equal to $\tan^2 A . \text{cosec}^2 A$?

a) $\sin^2 A$ b) $\cos^2 A$

c) $\sec^2 A$ d) $\cos^2 A$

24. If $\sec(90° - \theta) = \frac{5}{3}$ then what is the value of $\sin\theta$?

a) $\frac{3}{5}$ b) $\frac{5}{4}$

c) $\frac{4}{3}$ d) $\frac{5}{3}$

25. If $a\cos A - a\sin A = 0$ then which of the following is the value of $\tan A$?

a) a b) $\frac{1}{a}$

c) 1 d) -1

26. **If $3 - 4\sec A \sin A = 0$ then which of the following is the value of tanA?**

a) $\frac{3}{7}$ b) $\frac{3}{4}$

c) $\frac{4}{3}$ d) $\frac{7}{3}$

27. **If $5 - 2\,\mathrm{cosec} A \cos A = 0$ then which of the following is the value of tanA?**

a) $\frac{2}{7}$ b) $\frac{7}{2}$

c) $\frac{5}{2}$ d) $\frac{2}{5}$

28. **If $\tan\theta - \cot\theta = 0$ then $\tan\theta$ = What?**

a) -2 b) 0

c) 1 d) 2

29. **Which of the following is the value of $\frac{\sin^2\theta}{\tan\theta}\,\mathrm{cosec}^2\theta$?**

a) $\sin\theta$ b) $\cos\theta$

c) $\sec\theta$ d) $\cot\theta$

30. **Which of the following is the value of $\frac{\cot^2\theta}{\mathrm{cosec}^2\theta}.\cos\theta$?**

a) $\sin^2\theta$ b) $\sin^3\theta$

c) $\cos^2\theta$ d) $\cos^3\theta$

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