

D.K.M. COLLEGE FOR WOMEN (AUTONOMOUS)
APTITUDE TEST

TRIGONOMETRY- TEST 39

1. If $2y\cos\hat{I}_1 = x\sin\hat{I}_1$, and $2x\sec\hat{I}_1 - y\csc\hat{I}_1 = 3$, then value of $x^2 + y^2$ is

a) 1	b) 2
c) 3	d) 4
2. If θ be acute angle and $\cos\theta = 15/17$, then the value of $\cot(90^\circ - \theta)$ is

a) $2\sqrt{8}/15$	b) $8/15$
c) $\sqrt{2}/7$	d) $8\sqrt{7}/17$
3. If $\cot a = 3$, then the value of $(\sin^3 a + \cos^3 a)/\cos a$ is ?

a) $25/27$	b) $14/15$
c) 9	d) $11/15$
4. If $7\sin\hat{I}_2 = 24\cos\hat{I}_2$; $0 < \hat{I}_2 < \hat{I}_2/2$, then the value of $14\tan\hat{I}_2 - 75\cos\hat{I}_2 - 7\sec\hat{I}_2$ is equal to

a) 3	b) 4
c) 1	d) 2
5. Provided $\sin(A \hat{+} B) = \sin A \cos B \hat{+} \cos A \sin B$, then $\sin 15^\circ$ will be

a) $\sqrt{3}/2\sqrt{2}$	b) $(\sqrt{3} - 1)/2\sqrt{2}$
c) $(\sqrt{3} - 1)/\sqrt{2}$	d) $(\sqrt{3} - 1)/2$
6. The angles of elevation of the top of a building from the top and bottom of a tree are x and y respectively. If the height of the tree is h metre, then, in metre, the height of the building is.

a) $h \cot x / (\cot x - \cot y)$	b) $h \cot y / (\cot x + \cot y)$
c) $h \cot x / (\cot x + \cot y)$	d) $h \cot y / (\cot x - \cot y)$
7. If $\sin 21^\circ = x/y$, then $\sec 21^\circ - \sin 69^\circ$ is equal to

a) $x^2/y\sqrt{y^2 - x^2}$	b) $y^2/x\sqrt{y^2 - x^2}$
c) $x^2/y\sqrt{x^2 - y^2}$	d) $y^2/x\sqrt{x^2 - y^2}$
8. If $x\sin^3\theta + y\cos^3\theta = \sin\theta \cos\theta$ and $x \sin\theta - y \cos\theta = 0$, then the value of $x^2 + y^2$ equals

a) 1	b) $1/2$
c) $3/2$	d) 2
9. If $\sin(x + y)/\sin(x - y) = (a + b)/(a - b)$, then the value of $\tan x/\tan y$ is

a) a/b	b) b/a
c) ab	d) $(a - b)/(a + b)$
10. If $\sin 3\hat{I}_1 \sec 2\hat{I}_1 = 1$, then what is the value of $(3\tan^2(5\hat{I}_1/2) \hat{+} 1)$?

a) 0	b) 1
c) 2	d) 3
11. Two persons are on either side of a temple, 75 m high, observe the angle of elevation of the top of the temple to be 30° and 60° respectively. The distance between the persons is

a) 173.2 m	b) 100 m
c) 157.7 m	d) 273.2 m
12. $2 - \cos^2\theta = 3\sin\theta\cos\theta$, $\sin\theta \neq \cos\theta$ then $\tan\theta$ is

a) $1/2$	b) 0
c) $2/3$	d) $1/3$
13. An person 1.8m tall is $20\sqrt{3}$ away from a tower. The angle of elevation from

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his eye to the top of the tower is 30° . Find height of the tower is?

- a) 21.8m
c) 21.6m

- b) 23.8m
d) 24.8m

14. In a triangle ABC, if angle $A = 72^\circ$, angle $B = 48^\circ$ and $c = 9$ cm then \hat{C} is

- a) 60°
c) 66°

- b) 63°
d) 69°

15. Considering Cosine Rule of any triangle ABC, possible measures of angle A includes

- a) angle A is acute
c) angle A is right-angle

- b) angle A is obtuse
d) all of above

16. Dimensions of plane includes

- a) length only
c) depth and length

- b) breadth only
d) breadth and length

17. By expressing $\sin 170^\circ$ in terms of trigonometrical ratios, answer will be

- a) $\sin 10^\circ = 0.1631$
c) $\sin 10^\circ = 0.3761$

- b) $\sin 10^\circ = 0.1736$
d) $\sin 10^\circ = 1.7362$

18. By expressing $\cos 113^\circ$ in terms of trigonometrical ratios, answer will be

- a) $-\cos 62^\circ = -0.8520$
c) $-\cos 67^\circ = -0.3907$

- b) $-\cos 65^\circ = -0.4258$
d) $-\cos 76^\circ = -0.7093$

19. For Cosine Rule of any triangle ABC, a^2 is equal to

- a) $b^2 + a^2 - 2ac \cos A$
c) $b^2 - c^2 + 3bc \cos C$

- b) $b^2 + c^2 - 2bc \cos A$
d) $b^3 + c^3 - 2bc \cos B$

20. Cosine Rule is also known as

- a) Cosine Area
c) Cosine Triangle

- b) Sine triangle
d) Cosine Formula

21. Considering $0^\circ < x < 180^\circ$, angle of $\sin x = 0.2385$ is

- a) $13.80^\circ, 166.20^\circ$
c) $18.02^\circ, 165.02^\circ$

- b) $14^\circ, 150^\circ$
d) $21^\circ, 170.32^\circ$

22. Formula for area of a triangle ABC is

- a) $2ab \sin C = 2bc \sin A = 2ac \sin B$

- b) $3/2ab \sin C = 3/2bc \sin A = 3/2ac \sin B$

- c) $1/2ab \sin C + 1/2bc \sin A + 1/2ac \sin B$

- d) $1/2ab \sin C = 1/2bc \sin A = 1/2ac \sin B$

23. Considering Cosine rule, $\cos C$ is equal to

- a) $a^2 - b^2 - c^2/2bc$
c) $2a + 2b - 2c/2ac$

- b) $a^2 + b^2 - c^2/2ab$
d) $2a^2 + 2b^2 + 2c^2/2abc$

24. For any acute angle, cosine A is equal to

- a) $\cos (180^\circ - A)$
c) $\cos (180^\circ + A)$

- b) $-\cos (180^\circ - A)$
d) $-\cos (180^\circ + A)$

25. $\csc^2 \theta / 2 - \cot^2 \theta / 2 =$

- a) 0
c) 1

- b) -1
d) $\sec^2 2\theta$