

108 DAYS ONLINE COACHING- (DAY 54)- [17-04-2020~FRIDAY]

SOME APPLICATIONS OF TRIGONOMETRY



NAME OF THE CANDIDATE *

M4

PLACE OF THE CANDIDATE *

PATHANAMTHITTA

WHAT'S APP NO (JOINED IN THE SAI EDN COACHING PLATFORM) *

0

PLEASE WATCH THE ONLINE CLASSES CAREFULLY AND NOTE DOWN IT IN YOUR DIARY BEFORE SENDING THE ANSWERS

<https://youtu.be/KWTB-rYDq9c>

<https://youtu.be/QgKINL9AwhE>

1. A tower is $100\sqrt{3}$ metres high. Find the angle of elevation of its top from a point 100 metres away from its foot? *

- 60 degree
- 30 degree
- 45 degree
- 75 degree

2. The angle of elevation of the top of the tower from a point on the ground, which is 30 m away from the foot of the tower is 30 degree. Find the height of the tower? *

- $10\sqrt{3}$ metres
- $30\sqrt{3}$ metres
- $60\sqrt{3}$ metres
- $20\sqrt{3}$ metres

3. A kite is flying at a height of 60m above the ground. The string attached to the kite is temporarily tied to a point on the ground. The inclination of the string with the ground is 60 degree. Find the length of the string assuming that there is no slack in the string? *

- $10\sqrt{3}$ metres
- $20\sqrt{3}$ metres
- $30\sqrt{3}$ metres
- $40\sqrt{3}$ metres

4. The string of a kite is 100 metres long and it makes an angle of 60 degree with the horizontal. Find the height of the kite, assuming that there is no slack in the string? * 1 point

- 20√3 metres
- 30√3 metres
- 50√3 metres
- 70√3 metres

5. An observer 1.5m tall is 28.5m away from a tower. The angle of elevation of the top of the tower from her eyes is 45 degree. What is the height of the tower? * 1 point

- 25 m
- 30 m
- 35 m
- 40 m

6. An electrician has to repair an electric fault on a pole of height 4 m. He needs to reach a point 1.3 m below the top of the pole to undertake the repair work. What should be the length of the ladder that he should use which when inclined at an angle of 60 degree to the horizontal would enable him to reach the required position? * 1 point

- 9 m
- 6√3m
- 9√3/5 m
- 18√3/2m

7. From a point on the ground 40 m away from the foot of a tower, the angle of elevation of the top of the tower is 30 degree. The angle of elevation of the top of a water tank(on the top of the tower) is 45 degree. Find the height of the tower and depth of the tank? *

- 23.1m, 16.9m
- 26.3m, 17.8m
- 19.2m,39.7m
- 13.6m,36.5m

8. Two pillars of equal height and on either side of a road, which is 100m wide. The angles of elevation of the top of the pillars are 60 degree and 30 degree at a point on the road between the pillars.From the given options find the position of the point between the pillars ? *

- 25 m
- 50 m
- 90 m
- 65 m

9. A man on the top of a vertical tower observes a car moving at a uniform speed coming directly towards it. If it takes 12 minutes for the angle of depression to change from 30 degree to 45 degree, how soon after this, will the car reach the tower? Give your answer to the nearest second. *

- 23 minutes 42 seconds
- 16 minutes 23 seconds
- 13 minutes 10 seconds
- 18 minutes 36 seconds

10. As observed from the top of a light house, 100 m above sea level, the angle of depression of a ship, sailing directly towards it, changes from 30 degree to 45 degree. Determine the distance travelled by the ship during the period of observation? *

1 point

- $100\sqrt{3}\text{m}$
- $120\sqrt{3}\text{m}$
- $100(\sqrt{3}-1)\text{m}$
- $90(\sqrt{3}-2)\text{m}$

11. From a window 15 metres high above the ground in a street, the angles of elevation and depression of the top and the foot of another house on the opposite side of the street are 30 degree and 45 degree respectively. Find the height of the opposite house? *

1 point

- $5\sqrt{3}(1+\sqrt{3})$ metres
- $5(\sqrt{3}+1)$ metres
- $3(\sqrt{3}+5)$ metres
- $3\sqrt{5}(1+\sqrt{3})$ metres

12. A man standing on the deck of a ship, which is 10 m above water level. He observes the angle of elevation of the top of a hill as 60 degree and the angle of depression of the base of the hill as 30 degree. Calculate the distance of hill from the ship and the height of the hill? *

1 point

- $12\sqrt{3}\text{m}, 60\text{ m}$
- $8\sqrt{3}\text{m}, 65\text{ m}$
- $20\sqrt{3}\text{m}, 30\text{m}$
- $10\sqrt{3}\text{m}, 40\text{ m}$

13. The angle of elevation of a jet plane from a point A on the ground is 60 degree. After a flight of 30 seconds, the angle of elevation changes to 30 degree. If the jet plane is flying at a constant height of $3600\sqrt{3}$ m, find the speed of the jet plane(in km/hr)? *

1 point

- 765
- 946
- 864
- 518

14. The angle of elevation of a cloud from a point 60 m above the lake is 30 degree and the angle of depression of the reflection of the cloud in the lake is 60 degree. Find the height of the cloud? *

1 point

- 160 m
- 120 m
- 140 m
- 180 m

15. A 1.2 m tall girl spots a balloon moving with the wind in a horizontal line at a height of 88.2 m from the ground. The angle of elevation of the balloon from the eyes of the girl at any instant is 60 degree. After some time, the angle of elevation reduces to 30 degree. Find the distance travelled by the balloon during the interval? *

1 point

- $60\sqrt{3}$ m
- $58\sqrt{3}$ m
- $46\sqrt{3}$ m
- $28\sqrt{3}$ m

16. A straight highway leads to a tower. A man standing at the top of the tower observes a car at an angle of depression of 30 degree, which is approaching to the foot of the tower with a uniform speed. Six seconds later the angle of depression of the car is found to be 60 degree. Find the further time taken by the car to reach the foot of the tower? *

- 6 seconds
- 3 seconds
- 4 seconds
- 8 seconds

17. An aeroplane when flying at a height of 4000 m from the ground passes vertically above another aeroplane at an instant when the angles of the elevation of the two planes from the same point on the ground are 60 degree and 45 degree respectively. Find the vertical distance between the aeroplanes at that instant? *

- $4000(\sqrt{3}-1)/\sqrt{3}$ m
- $3000(\sqrt{3}+1)/\sqrt{3}$ m
- $800\sqrt{3}$ m
- $1500\sqrt{3}(\sqrt{3}-1)/2$ m

18. A 1.5 m tall boy is standing at some distance from a 30 m tall building . The angle of elevation from his eyes to the top of the building increases from 30 degree to 60 degree as he walks towards the building. Find the distance he walked towards the building? *

- $16\sqrt{3}$ m
- $13\sqrt{3}$ m
- $21\sqrt{3}$ m
- $19\sqrt{3}$ m

19. From a point on the ground the angles of elevation of the bottom and top of a transmission tower fixed at the top of 20 m high building are 45 degree and 60 degree respectively. Find the height of the transmission tower? *

- 60($\sqrt{3}-1$) m
- 45($\sqrt{3}-1$) m
- 20($\sqrt{3}-1$) m
- 32($\sqrt{3}-1$) m

20. A statue 1.6 m tall stands on the top of pedestal. From a point on the ground, the angle of elevation of the top of the statue is 60 degree and from the same point the angle of elevation of the top of the pedestal is 45 degree. Find the height of the pedestal? *

- 1.6/($\sqrt{3}-1$) m
- 8.2/($\sqrt{3}-1$) m
- 1.6/($\sqrt{3}+1$) m
- 8.2/($\sqrt{3}+1$) m

21. A TV Tower stands vertically on a bank of a river. From a point on the other bank directly opposite the tower, the angle of elevation of the top of the tower is 60 degree. From a point 20 m away this point on the same bank, the angle of elevation of the top of the tower is 30 degree. Find the height of the tower and width of the river? *

- 30 m
- 20 m
- 90 m
- 10 m

22. As observed from the top of a 75 m tall lighthouse, the angles of depression of two ships are 30 degree and 45 degree respectively. If one ship is exactly behind the other on the same side of the lighthouse , find the distance between the two ships? *

1 point

- 65($\sqrt{3}-1$) m
- 45($\sqrt{3}-1$) m
- 75($\sqrt{3}-1$) m
- 35($\sqrt{3}-1$) m

23. The angle of elevation of top of the building from the foot of the tower is 30 degree and the angle of the top of the tower from the foot of the building is 60 degree. If the tower is 50 m high find the height of the building? *

1 point

- 50/3 m
- 80/3 m
- 70/3 m
- 100/3 m

24. The angle of elevation of a ladder leaning against a wall is 60 degree and the foot of the ladder is 4.6 m away from the wall. The length of the ladder is *

1 point

- 4.6 m
- 2.3 m
- 6.2 m
- 9.2 m

25. Two ships are sailing in the sea on the two sides of a light house. The angles of elevation of the top of the light house as observed from the two ships are 30 degree and 45 degree respectively. If the light house is 100 m high, the distance between the two ships is *

1 point

- 323 m
- 464 m
- 273 m
- 125 m

THANK YOU!!!

This content is neither created nor endorsed by Google.

Google Forms