

RISE OF NATION ACADEMY

Subject:- Mathematics (SET-A)

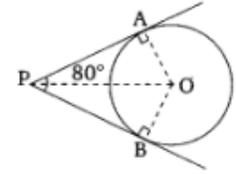
Time:- 2 Hrs.

Min. Marks:- 20

Chapter:- Circle, A.P., Quadratic, Trigonometry

Max. Marks:- 40

1. If p^{th} term of an A.P. is q and q^{th} term is P find the first term



2. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80° , then $\angle POA$ is equal to (2)

3. A circus artist is climbing a 20 m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground. Find the height of the pole, if the angle made by the rope with the ground level is 30° . (2)

4. Length of tangent drawn from external point to a circle is equal in length. (2)

5. A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground making an angle 30° with it. The distance between the feet of the tree to the point where the top touches the ground is 8 m. find the height of the tree. (2)

6. The sum of the reciprocals of Rehman's ages, (in years) 3 years ago and 5 years from now is $1/3$. Find his present age. (2)

7. The sum of n terms given by $S_n = n^2 + 3n$. Find 20^{th} term. (3)

OR

If the sum of first 7 terms of an A.P is 49 and that of its first 17 terms is 289, find the sum of first n terms of

8. In figure, XY and X'Y' are two parallel tangents to a circle, x with centre O and another tangent AB with point of contact C intersecting XY at A and X'Y' at B. Prove that $\angle AOB = 90^\circ$. (3)

9. A motorboat whose speed in still water is 18 km/h, takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream. (3)

10. The angle of elevation of the top of a building from the foot of a tower is 30° and the angle of elevation of the top of the tower from the foot of the building is 60° . If the tower is 50 m high, find the height of the building. (3)

RISE OF NATION ACADEMY

Subject:- Mathematics (SET-A)

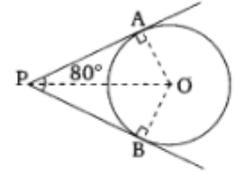
Time:- 2 Hrs.

Min. Marks:- 20

Chapter:- Circle, A.P. ,Quadratic, Trigonometry

Max. Marks:- 40

1. If p^{th} term of an A.P. is q and q^{th} term is P find the first term



2. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at angle of 80° , then $\angle POA$ is equal to (2)

3. A circus artist is climbing a 20 m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground. Find the height of the pole, if the angle made by the rope with the ground level is 30° . (2)

4. Length of tangent drawn from external point to a circle is equal in length. (2)

5. A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground making an angle 30° with it. The distance between the feet of the tree to the point where the top touches the ground is 8 m. find the height of the tree. (2)

6. The sum of the reciprocals of Rehman's ages, (in years) 3 years ago and 5 years from now is $1/3$. Find his present age. (2)

7. The sum of n terms given by $S_n = n^2 + 3n$. Find 20^{th} term. (3)

OR

If the sum of first 7 terms of an A.P is 49 and that of its first 17 terms is 289, find the sum of first n terms of

8. In figure, XY and X'Y' are two parallel tangents to a circle, x with centre O and another tangent AB with point of contact C intersecting XY at A and X'Y' at B. Prove that $\angle AOB = 90^\circ$. (3)

9. A motorboat whose speed in still water is 18 km/h, takes 1 hour more to go 24 km upstream than to return downstream to the same spot. Find the speed of the stream. (3)

10. The angle of elevation of the top of a building from the foot of a tower is 30° and the angle of elevation of the top of the tower from the foot of the building is 60° . If the tower is 50 m high, find the height of the building. (3)

RISE OF NATION ACADEMY

Min. Marks:- 20

Subject:- Mathematics (SET-A)
Chapter:- Circle, A.P. ,Quadratic, Trigonometry

Time:- 2 Hrs.
Max. Marks:- 40

11. A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC into which BC is divided by the point of contact D are of lengths 8 cm and 6 cm respectively. Find the sides AB and AC. (4)

12. In a rectangular park of dimensions 50 m × 40 m, a rectangular pond is constructed so that the area of grass strip of uniform width surrounding the pond would be 1184 m². Find the length and breadth of the pond. (4)



13. A group of student of class X visited Statute of unity on an education trips the teacher and students had interested in history as well. It is located at the Gujarat is about 182 meters in height. (4)

(1) If the altitude of sun is at 60°, then height of vertical tower that will cast a shadow of length $20\sqrt{3}$ m. is

(2) The ratio of height of Statute of unity and its shadow is 1:1 then angle of elevation of sun is:

(3) What is the angle of elevation if they are standing away from 182 from Statute of unity

(4) The angle formed by line of sight with horizontal when the object viewed is below the horizontal line

14. Your elder brother wants to buy a car and plans to take loan from a bank for his car. He repays his total loan of Rs 1,18,000 by paying every month starting with the first installment of Rs 1000. If he increases the installment by Rs 100 every month.(4)

(1) The amount paid by him in 30th installment is

(2) The amount paid by him in the 30 installments is

(3) What amount does he still have to pay after 30th installment?

(4) If total installments are 40 then amount paid in the last installment?

RISE OF NATION ACADEMY

Min. Marks:- 20

Subject:- Mathematics (SET-A)
Chapter:- Circle, A.P. ,Quadratic, Trigonometry

Time:- 2 Hrs.
Max. Marks:- 40

11. A triangle ABC is drawn to circumscribe a circle of radius 4 cm such that the segments BD and DC into which BC is divided by the point of contact D are of lengths 8 cm and 6 cm respectively. Find the sides AB and AC. (4)
12. In a rectangular park of dimensions 50 m × 40 m, a rectangular pond is constructed so that the area of grass strip of uniform width surrounding the pond would be 1184 m². Find the length and breadth of the pond. (4)
13. A group of student of class X visited Statute of unity on an education trips the teacher and students had interested in history as well. It is located at the Gujarat is about 182 meters in height. (4)
- (1) If the altitude of sun is at 60°, then height of vertical tower that will cast a shadow of length $20\sqrt{3}$ m. is
- (2) The ratio of height of Statute of unity and its shadow is 1:1 then angle of elevation of sun is:
- (3) What is the angle of elevation if they are standing away from 182 from Statute of unity
- (4) The angle formed by line of sight with horizontal when the object viewed is below the horizontal line
14. Your elder brother wants to buy a car and plans to take loan from a bank for his car. He repays his total loan of Rs 1,18,000 by paying every month starting with the first installment of Rs 1000. If he increases the installment by Rs 100 every month.(4)
- (1) The amount paid by him in 30th installment is
- (2) The amount paid by him in the 30 installments is
- (3) What amount does he still have to pay offer 30th installment?
- (4) If total installments are 40 then amount paid in the last installment?

