MATHS

BOOKS - EDUCART PUBLICATION

SAMPLE QUESTION PAPER 02

Section A Multiple Choice Questions

1. HCF of two numbers is 18 and their LCM is 216. If one of the number is 36 then the other numnber is:

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2. The cumulative frequency table is useful in determining the

A. Mean

B. Median

C. Mode

D. All of these

Answer:

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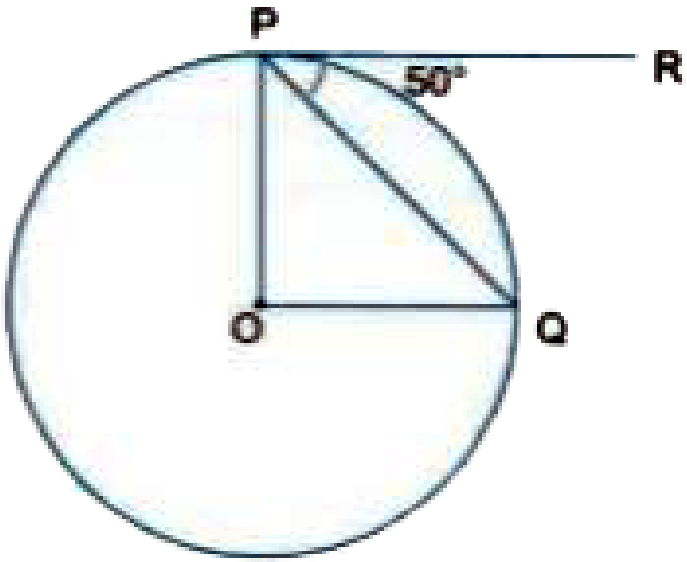
3. In Fig , O is the centre of a circle , PQ is a chord and the tangent PR at P makes an angle of 50° with PQ. Find $\angle POQ$.



A. 130°

B. 90°

C. 100°

D. 75°

Answer: C

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4. $2^{\sqrt{3}}$ is :

A. an integer

B. a rational number

C. an irrational

D. a whole number

Answer: C

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5. Two coins are tossed simultaniously. The probability of getting at most one head is:

A. $\frac{1}{4}$

B. $\frac{1}{2}$

C. $\frac{1}{3}$

D. $\frac{3}{4}$

Answer: D

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6. If one zero of the polynomial $\left(3x^2 + 8x + k\right)$ is the reciprocal of the other then value of k is:

A. 3

B. -3

C. $\frac{1}{3}$

D. $-\frac{1}{3}$

Answer: A

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7. The decimal expansion of $\frac{23}{2^3 \times 5^2}$ will terminate after how many places of decimal?

A. 2

B. 4

C. 3

D. 1

Answer: C

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8. How many (i) maximum (ii) minimum number of zeroes can a quadratic polynomial have ?

A. 1

B. 4

C. 2

D. 3

Answer: D

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9. The distance of the (-12,5) from the origin is:

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10. If the centre of a circle is (3,5) and end points of a diameter are (4,7) and (2,y) then the value of y is:

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Section A Fill In The Blanks

1. The area of triangle formed with the origin and the points (4,0) and (0,6) is .....

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2. The coordinates of the point P dividing the line segment joining the points A(1, 3) and B(4, 6) in the ratio 2:1 is

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3. Value of the roots of the quadratic equation $x^2 - x - 6 = 0$ are ..... .

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4. If $\sin\theta = \frac{5}{13}$ then the valut of $\tan\theta$ is .....

.

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5. The value of $\left(\tan^2 60^\circ + \sin^2 45^\circ\right)$ is

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6. The sides of two similar triangles are in the ratio 3:7. The ratio of areas of these triangles

will be :

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Section A Answer The Questions

1. Find the value of $\cos 48^\circ - \sin 42^\circ$.

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2. Evaluate : $(\tan 23^\circ) \times (\tan 67^\circ)$

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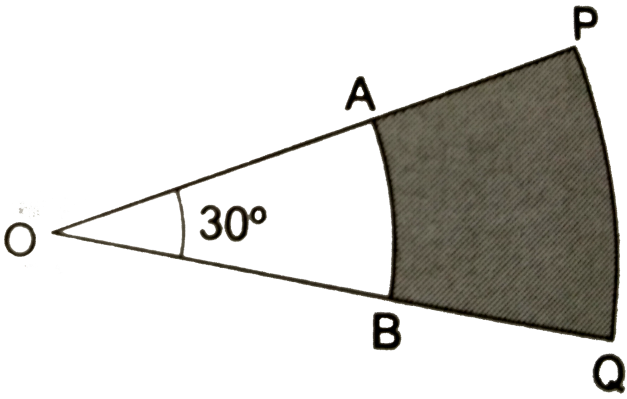
3. In the given figure PQ and AB are respectively the arcs of two concentric cicles of radii 7 cm and 3.5 cm with centre O. If $\angle POQ = 30^\circ$, find the area of the shaded region.



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4. A card is drawn at random from a well shuffled deck of 52 playing cards. What is the probability of getting a black king?

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5. Puneet scored 175 marks in a test and failed by 35 marks. If the passing percentage of the test is 35%, what are the maximum marks of the test ?

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6. If $3k - 2$, $4k - 6$ and $k + 2$ are these consecutive terms of A.P, then find the value of k.

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Section B

1. In a lottery there are 10 prizes and 25 blanks. What is the probability of getting a prize?

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2. In a family of three children, find the probability of having at least two boys.

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3. Two dice are rolled simultaneously . Find the probability of

getting a doublet of even numbers .

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4. the sum of two numbers is 16 and sum of squares is 48.find product of number

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5. Two concentric circles are of radii 5 cm and 3 cm. Find the length of the chord of the larger circle which touches the smaller circle.

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6. Prove $\frac{1}{1+\sin\theta}+\frac{1}{1-\sin\theta}=2\sec^2\theta$

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7. Prove that $\frac{1-\tan^2\theta}{1+\tan^2\theta}=\cos^2-\sin^2\theta$

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8. The wheel of a motorcycle is of radius 35 cm. How many revolutions are required to travel a distance of 11m?

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9. Divide $\left(2x^3 - 3x^2 - 10x + 5\right)$ by (2x-3) and write the quotient and the remainder.

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Section C

1. If α and β are the zeroes of the polynomial $f(x) = 5x^2 - 7x + 1$, then find the value of $\left(\frac{\alpha}{\beta} + \frac{\beta}{\alpha}\right)$.

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2. Draw a line segment of length 8 cm and divides it in the ratio $2:3$

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3. Draw a circle with radius 4.2 cm . Construct tangents to the circle from a point at a distance of 7 cm from the centre .

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4. The minute hand of a clock is 21 cm long. Calculate the distance travelled by its tip in 24 minutes.

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5. If x = 3 sin $\theta + 4\cos\theta$ and $y = 3\cos\theta - 4\sin\theta$ then prove that $x^2 + y^2 = 25$.

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6. If $\sin\theta + \sin^2\theta = 1$, prove that $\cos^2\theta + \cos^4\theta = 1$

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7. Prove that $\sqrt{3}$ is an irrational number

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8. Use Euclid's algorithm of find the HCF of 272 and 1032.

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9. If P be any point in the plane of square ABCD, prove that

$$PA^2 + PC^2 = PB^2 + PD^2$$

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10. In a classroom, 4 friends are seated at the points A. B. C and D as shown in Fig. 7.8. Champa and Chameli walk into the class and

after observing for a few minutes Champa asks Chameli, "Don't you think ABCD is a square?" Chameli disagrees. Usi

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11. Solve:

$6x - 3y = 13, 2x + y = 3$

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Section D

1. The product of two consectutive positive integers is 306. Find the intergers.

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2. The 17th term of an A.P. is 5 more than twice its 8th term. If the 11th term of the A.P. is 43, find the n^{th} term.

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3. How many terms of the AP 3, 5, 7, 9, ... must be added to get the sum 120?

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4. A person standing on the bank of a river observes that the angle of elevation of the top of a tree standing on the opposite bank is 60°. When he moves 40 m away from the bank, he finds the angle of elevation to be 30°. Find the

height of the tree and width of the river. $(\sqrt{3} = 1.73)$

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5. Prove that the ratio of the areas of two similar triangles is equal to the ratio of the squares of their corresponding sides.

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6. Prove that the length of the tangents drawn from an external point to a circle are equal.

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7. From a solid cylinder whose height is 15 cm and diameter 16 cm, a conical cavity of the same height and same diameter is hollowed out. Find the total surface area of the remaining solid. $[Use \pi = 3.14.]$

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8. The height of a cone is 10 cm. The cone is divided into two parts using a plane parallel to its base at the middle of its height. Find the ratio of the volumes of the two parts.

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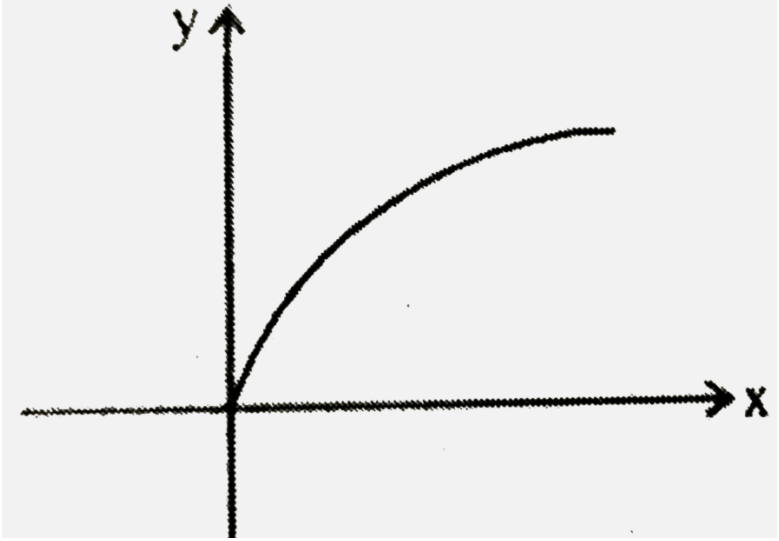
9.



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