MATHS

BOOKS - CAMBRIDGE MATHS (KANNADA ENGLISH)

CPC MODEL QUESTION PAPER -6

Mcqs

1. The pair of linear equation $3a + 4b =$ k, 9a + 12 b =6 have infinitely many solutions when ,

A. $k = -2$

B. $K = 3$

C. $k = 2$

D. $k = -3$

Answer: C

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2. $n^2 - 1$ is divisible by 8, if n is

A. Prime numbers

B. Odd integer

C. even integer

D. Natural number

Answer: B

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3. $\sqrt{1+\tan^2\theta}$ = _____, where $0 < \theta < 90^\circ$

A. $\sec\theta$

B. $\cos ec\theta$

C. $\cos\theta$

D. $\sin\theta$

Answer: A

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4. If Q divides the line A(3,5) and B(7,9) internally in the ratio 2:3 , then the co-ordinates of Q are .

A. $\left(\frac{33}{5}, \frac{23}{5}\right)$

B. $\left(\frac{-23}{5}, \frac{33}{5}\right)$

C. $\left(\frac{23}{5}, \frac{33}{5}\right)$

D. $\left(-\frac{33}{5}, \frac{23}{5}\right)$

Answer: C

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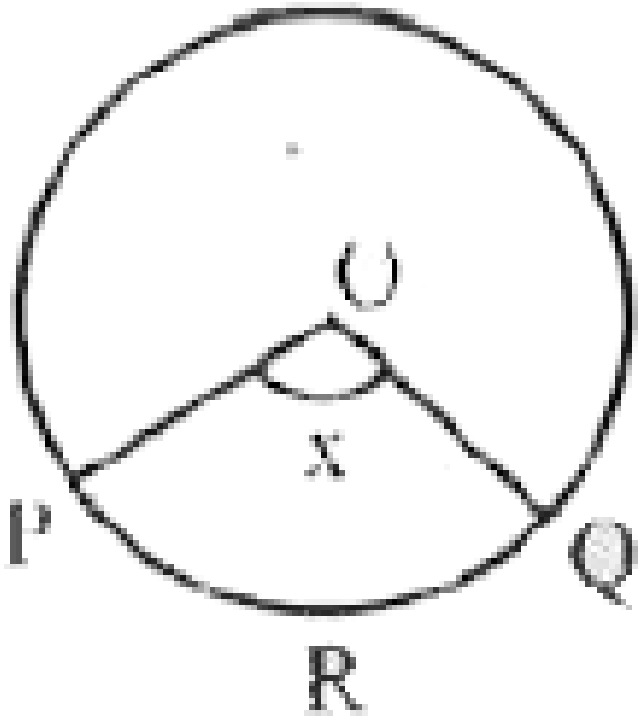

5.

If area of OPRQ $= \frac{5}{18}$ of area of circle then the value of x

A. 25°

B. 50°

C. 75°

D. 100°

Answer: D

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6. IF $1 + 2 + 3 + \ldots\ldots N$ terms = 28 then n si equal to

A. 28

B. 7

C. 8

D. 56

Answer: B

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7. IF $E_1E_2E_3\ldots\ldots\ldots E_{10}$ are the possible elementary events of a random experiment , then

$P(E_1)+P(E_2)+P(E_3)+\ldots\ldots P(E_{10})$ is equal to

A. 0

B. 1

C. 2

D. 3

Answer: B

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8. If we express sec A in terms of sin A, then sec A is equal to

A. $\frac{1}{\sqrt{1-\sin^2 A}}$

B. $\frac{1}{\sqrt{1+\sin^2 A}}$

C. $\frac{1}{\sqrt{1-\sin A}}$

D. $\frac{1}{\sqrt{1+\sin A}}$

Answer: A

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Question

1. What is the $\frac{p}{q}$ form of $43.\overline{123456789}$?

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2. Write the quandratic equation formed by the roots $3+\sqrt{5}$ and $3-\sqrt{5}$

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3. Find the value of $\frac{\sin 26}{\sec 64}+\frac{\cos 26}{\cos ec64}$

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4. What is the distance between the points $P(\cos\theta, \sin\theta)$ and Q $(\sin\theta - \cos\theta)$

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5. IF a number $'x'$ choosen at random from the numbers $-2, -1, 0, 1, 2$. What is the probability that $x^2 < 3$?

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6. What is the area of a circle whosse perimeter is 44 cms.

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7. A toy was made by scopping out a hemisphere from each end of a solid cylinder . If the height of the cylinder is h cm and base radius is r rms . Find the total surface area of the toy .

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8. The circumference of a circle exceeds the diameter by 15 cm . Find the radius of the circle

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9. AX an BY are perpendiculars to segment XY . If AO = 5 cm , BO = 7 cm and Area of $\Delta AOX = 150cm^2$, find the area of ` Delta BOY .

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10. In the given figure , BD $\perp$ AC .Prove that $AB^2 + CD^2 = AD^2 + BC^2$

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11. Find the zeroes of the polynomial p(y) $= y^3 - 5y^2 - 16y + 80.$ Zero are $\alpha, -\alpha$ and β

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12. Two pillars of equal height and on either side of a road , which is 100 m top of the angles of elevation of the top of the pillars are 60 and 30 at a point on the road between the pillars find the position of the point between the pillars and height of eah pillars

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13. The three small metallic spheres of radii in the ratio of 3 :4 :5 are melted to form a big

sphere of radius 12 cm . Find the radius of the three small metallic spheres .

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14. In the given fig OACB is a quadrnat of a circle with centre O and radius 3.5 cm . If OD = 2cm find the area of the shadded region .

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15. Find the volume of the largest right circukar cone that can be cut of cube of edge 7 cm .

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16. The sum of a two digit numbers and the number obtained by reversing the order of its digits is 165 . If the digits differ by 3, find the number .

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17. Ten years ago sudhir was twelve times as old as his son Raghav and ten years hence , he will be twice as old as his son will be find their present ages .

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18. The altitude of a right triangle is 7 cm less than its base . If the hypotenuse is 13 cm , find the other two sides.

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19. Find the Area of the triangle formed by joining the mid points of the sides (0,-1) (2,1) and (0,3)

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20. Prove that the tangent at any point of a circle is perpendicular to the radius through the point of contacts .

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21. A hollow sphere of internal and external radii are 6 cm and 8 cm respectively is melted and recast into small cones of base radius 2 cm and height 8 cm . Find the number of cones .

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22. A medicine capsule is in the shape of a cylinder with two hemispheres stuck to each of its ends (see fig). The length of the entire

capsule is 14 mm and the diameter of the capsule is 5 mm. Find its surface area.

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23. solve graphically

$Y = \frac{1}{2}x$ and $3 \times + 4y - 20 = 0$

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24. The fourth term of an AP is 11 and 8 th term exceeds twice the fourth term by 5 , find AP

and find sum of first 100 terms .

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25. A person on tour has Rs. 360 for his expenses . If he extends his tour for 4 days the has to cut down his daily expenses by Rs. 3. find the the original duration of tour

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26. Two pipes running together can fill a cistren in $3\frac{1}{13}$ minutes . If one pipe takes 3 minutes more than the other to fill it find the time in which each pipe would fill cistern.

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27. In an AP whose first term is 2 , the sum of first five terms is one fourth the sum of the next five tems show that $T_{20} = -112$ find S_{20}

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28. A man repays a loan of Rs. 3250 by paying Rs. 20 in first month and then increase the payment by Rs. 15 every month .How long will it take to clear his loan ?

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29. Prove that:

$$\frac{\tan\theta}{1-\cot\theta}+\frac{\cot\theta}{1-\tan\theta}=1+\sec\theta\cos ec\theta$$

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30. State and prove pythagoras theorem .

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