MATHS

BOOKS - OSWAAL PUBLICATION MATHS (KANNADA ENGLISH)

SOLVED PAPER (SSLC KARNATAKA APRIL 2019)

Choose The Correct Alternative And Write The Complete Answer Along With Its Letter Of Alphabet

1. If the n^{th} term of an arithmetic progression $a_n = 24 - 3n$, then it's 2^{nd} term is

A. 18

B. 15

C. 0

D. 2

Answer: A

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2. The lines represented by $2x+3y-9=0$ and $4x+6y-18=0$ are

A. Intersecting lines

B. Perpendicular lines to each other

C. Parallel lines

D. Coincident lines

Answer: C::D

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3. A straigth line which passess through two points on a circle is

A. a chord

B. a secant

C. a tangent

D. the radius

Answer: A::C

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4. If the area of circle is 49π sq. units then it's perimeter is

A. 7π units

B. 9π units

C. 14π units

D. 49π units

Answer: A::D

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5. "The product of two consecutive positive integers is 30". This can be expressed algebraically as.

A. $x(x + 2) = 30$

B. $x(x - 2) = 30$

C. $x(x - 3) = 30$

D. $x(x + 1) = 30$

Answer: A::C

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6. If a and b are any two positive integers then

HCF (a,b) $\times$ LCM (a,b) is equal to

A. a + b

B. a - b

C. $a \times b$

D. $a \div b$

Answer: A::B

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7. $\cos 48^\circ - \sin 42^\circ = ?$

A. 0

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

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

D. 1

Answer:

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8. If $P(A) = 0.05$ the $P(\overline{A})$ is

A. 0.59

B. 0.95

C. 1

D. 1.05

Answer:

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Answer The Following

1. The given graph represents a pair of linear equations in two variables. Write how many solutions these pair of equations have.

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2. $17 = 6 \times 2+5$ is compared with Euclid's Division lemma a = bq +r then which number is representing the remainder

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3. Write the degree of the polynomial P(x) = $2x^2 - x^3 + 5$.

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4. Find the value of the discriminant of the quadratic equation $2x^2 - 4x + 3 = 0$

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5. Write the foumula to calculate the curved surface area of the frustum of a cone .

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6. Find the sum of first twenty terms of Arithmetic series $2 + 7 + 12 + \cdots$ using suitable formula.

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7. In $\Delta ABC, DE \| BC$. If AD = 5 cm ,BD = 7 cm and AC = 18 cm, find the length of AE.

OR

In the given figure if PQ ||RS, prove that $\Delta POQ \sim \Delta SOR$.

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8. Solve the following pair of linear equations by any suitable method.

$x+y = 5$ $2x-3y=5$

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9. In the figure, ABCD is a square of side 14 cm. A, B, C and Dare the centres of four congruent circles such that each circle touches externally two of the remaining three circles. Find the

area of the shaded region.

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10. Draw a circle of radius 4 cm and construct a pair of tangents such that the angle between them is 60°.

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11. Find the co - ordinates of points which divides the line segment joining the points A $(4, -3)$ and B (8,5) in the ratio $3:1$ internally

.

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12. Prove that $3+\sqrt{5}$ is an irrational number.

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13. The sum and product of the zeroes an a quadratic polynomial P (x) = $ax^2 + bx + c$ are -3 and 2 respectively, Show that b+c = 5a.

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14. Find the quotient and the remainder when P (x) = $3x^3 + x^2 + 2x + 5$ is divided by g(x) = x^2 +2x+1.

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15. Solve $2x^2$-5x+3 = 0 by using formula.

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16. The length of a rectangular field is 3 time its breadth . If the area of the field is 147 sq.m, find its length and breadth.

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17. If $\sqrt{3}\tan\theta = 1$ and θ is acute, find the value of $\sin 3\theta + \cos 2\theta$.

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18. Prove that $\left(\frac{1+\cos\theta}{1-\cos\theta}\right) = (\text{cosec}\theta + \cot\theta)^2$

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19. A cubical die numbered from 1 to 6 are rolled twice . Find the probability of getting the sum of numbers on its faces is 10 .

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20. The radii of two circular ends of a frustum of a cone shaped dustbin are 15 cm and 18 cm . If its depth is 63 cm find the volume of the dustbin

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21. Prove that "the lengths of tangents drawn from an external point to a circle are equal".

OR

In the given figure PQ and RS are two parallel tangents to a circle with centre O and another tangent AB with point of contact C intersecting PQ at A and RS at B. Prove that $\angle AOB = 90^\circ$.

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22. Calculate the median of the following frequency distribution table :

OR

Calculate the mode for the following frequency distribution table.

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23. The seventh term of an arithmetic progression is four times itss second term and

twelth term is 2 more than three times of its fourth term. Find the progression.

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24. The vertices of a ΔABC are A(-5,-1) B(3.-5) , C-(5.2).Show that the area of the ΔABC is four times the area of the triangle formed by joining the mid-points of the sides of the triangle ABC.

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25. Construct a triangle with sides 5 cm, 6 cm and 7 cm and then another triangle whose sides are $\frac{7}{5}$ of the corresponding sides of the first triangle.

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26. Find the sol.n of the following pair of linear by the graphical method.

$2x + y = 6$

$2x - y = 2$

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27. The angle of elevation of the top of a tower from two points at a distance of 4m and 9 m from the base of the tower and in the same straight line with it are complementary. Prove that the height of the tower is 6m.

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28. The bottom of a right cylindrical shaped vessel made from metallic sheet is dosed by a

cone shaped vessel as r shown in the figure. The radius of the circular base of the cylinder and radius of the circular base of the cone are each is equal to 7 cm. If t~e height of the cylinder is 20 cm and height of cone is 3 cm, calculate the cost of milk to fill completely this vessel at the rate of Rs. 20 per litre.

OR

A hemispherical vessel of radius 14 cm is fully filled with sand . This sand is poured on a level ground . The heap of sand forms a cone shape of height 7 cm . Calculate the area of ground

occupied by the circular base of the heap of the sand .

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29. Prove that “the ratio of the areas of two similar triangles is equal to the square of the ratio of their corresponding sides”.

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