MATHS

BOOKS - CAMBRIDGE MATHS (KANNADA ENGLISH)

MOST LIKELY QUESTION PAPER 10

Questions

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

A. $K = -2$

B. $K = 3$

C. $K = 2$

D. $K = -3$

Answer:

2. The HCF and LCM of 12, 15 and 21 are _____ and _____ respectively

A. 3, 1

B. 420, 3

C. 3, 420

D. 420, 1

Answer:

3. $\dfrac{\sin 18^\circ}{\cos 72^\circ} = ?$

A. $\dfrac{1}{2}$

B. 1

C. 0

D. $\dfrac{\sqrt{3}}{2}$

Answer: A

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4. The distance between the points P(2, 3) and Q(4, 1) is _____

A. $3\sqrt{6}$

B. $2\sqrt{2}$

C. $2\sqrt{4}$

D. $3\sqrt{9}$

Answer: B

5. In the given figure $\Delta ABC, DE\|BC$. If $DE = 5cm, BC = 8cm$ and $AD = 3.5cm$, then the length of AB is

A. 5.6 cm

B. 4.8 cm

C. 5.2 cm

D. 6.4 cm

Answer: A::C

6. The 10th term of an A.P : 2, 7, 12, ...

A. 1

B. 47

C. 9

D. 17

Answer: D

7. A box consits of 4 rec. 5 black and 6 white balls. One ball is drawn out at random, find the probability that the ball drawn is black.

A. $\dfrac{1}{15}$

B. 1

C. $\dfrac{1}{4}$

D. $\dfrac{1}{3}$

Answer: A::C

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8. In the given fig, the angle of elevation θ is

A. $30°$

B. $45°$

C. $90°$

D. $60°$

Answer: D

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9. $7 \times 11 \times 13 + 13$ is a composite number. Why ?

A.

B.

C.

D.

Answer: $\therefore$ 1014 is a composite number.

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10. If one of the roots of the quadratic equation $6x^2 - x - 2 = 0$ is $\dfrac{2}{3}$. Find the other.

A.

B.

C.

D.

Answer: $\dfrac{-1}{2}$

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11. Find the value of $\cos 90° + \tan 45°$

A.

B.

C.

D.

Answer: 1

12. If P(2, P) is the mid point of the line segment joining the points A(6, -5) and B(-2, 11) . Find the value of P.

A.

B.

C.

D.

Answer: $\therefore$ Co-ordinates of P aer (2, 3)

13. If the probability of winning a game is $\dfrac{5}{11}$, what is the probability of losing it.

A.

B.

C.

D.

Answer: $\therefore P(\overline{E}) = \dfrac{6}{11}$

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14. 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

A.

B.

C.

D.

Answer: $\therefore \lfloor POA = 50°$

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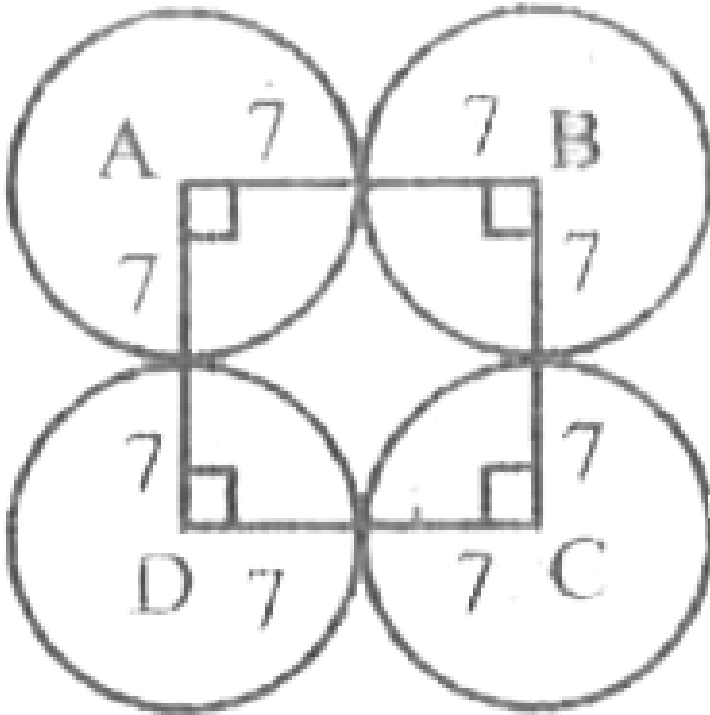**15.** Write the formula to find the volume of the sphere.

A.

B.

C.

D.

Answer: Volume of hemisphere $= \dfrac{2}{3}\pi r^3$

16. What is the Area of the shaded region ?

A.

B.

C.

D.

Answer: 42 sq. cms

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17. P.T $5 - \sqrt{3}$ is irrational.

A.

B.

C.

D.

Answer: $\therefore 5 - \sqrt{3}$ is not a rational number $\Rightarrow 5 - \sqrt{3}$ is an irrational number.
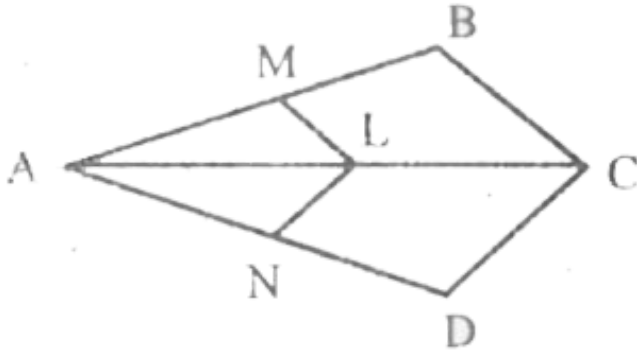
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18. In the figure $DE||AC$ and $DF||AE$. Prove that $\dfrac{BF}{FE} = \dfrac{BE}{EC}$.

OR

In fig $LM||CB$ and $LM||CD$, Prove that

$$\frac{AM}{AB} = \frac{AN}{AD}$$

A.

B.

C.

D.

Answer:

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19. On comparing the rations $\dfrac{a_1}{a_2}$, $\dfrac{b_1}{b_2}$ and $\dfrac{c_1}{c_2}$ find out whether the lines representing the following pair of linear equations intersect at a point, are parallel or coincident.

A.

B.

C.

D.

Answer: $\dfrac{a_1}{a_2} \neq \dfrac{b_1}{b_2}$, **The two lines are intersecting lines.**

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20. Draw a circle of radius 4cm and construct a pair of tangents to the circle from a point 8cm away from the centre.

A.

B.

C.

D.

Answer:

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21. Find a quadratic polynomial, the sum and product of whose zeroes are -3 and 2 respectively.

A.

B.

C.

D.

Answer: $x^2 + 3x + 2$

22. 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 $60°$. Find the length of the string, assuming that is no slack in the string.

OR

Two solid right circular cones have same height and the radii of bases aer r_1 and r_2. Both the cones aer metled and recasted to form a cylinder of same height. Show that the radius of the base of the cylinder is $\sqrt{\dfrac{r_1^2 + r_2^2}{3}}$

A.

B.

C.

D.

Answer: 69.20

OR

$$R = \sqrt{\frac{r_1^2 + r_2^2}{3}}$$

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23. A bicycle wheel makes 5000 revolutions in moving 11 km. Find the diameter of the wheel.

A.

B.

C.

D.

Answer: $\therefore$ Hence , the diameter of the wheel $= 70cm.$

24. A conical vessel whose internal radius is 5cm and height 24cm is full of water. The water is emptied into a cylindrical vessel with internal radius 10cms. Find the height to which the water rises.

A.

B.

C.

D.

Answer: ∴ **Height of the water in the cylindrical vessel** $= 2cm.$

25. If 2 is added to numerator and denoinator to a fraction, it becomes $\dfrac{9}{10}$. If 3 is subtracted from numerator and denominator , the fraction becomes $\dfrac{4}{5}$. Find the fraction.

OR

A girl is twice as old as her sister. Four years, hence the product of their ages (in years) will be 160. Find their present ages.

A.

B.

C.

D.

Answer: $\therefore$ **Fraction** $= \dfrac{x}{y} = \dfrac{7}{8}$

OR

Girls present age $= 6$ **years.**

Sister's age $= 12$ **years.**

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26. The difference of squares of two natural numbers is 84. The square of the larger number is 25 times the smaller number. Find the numbers.

A.

B.

C.

D.

Answer: $\therefore$ Two number are 10 and 4.

27. Find the value of K if the points A(2, 3) B(4, k) and C(6, -3) are collinear.

OR

Find the area of a triangle whose vertices are (1, -1)

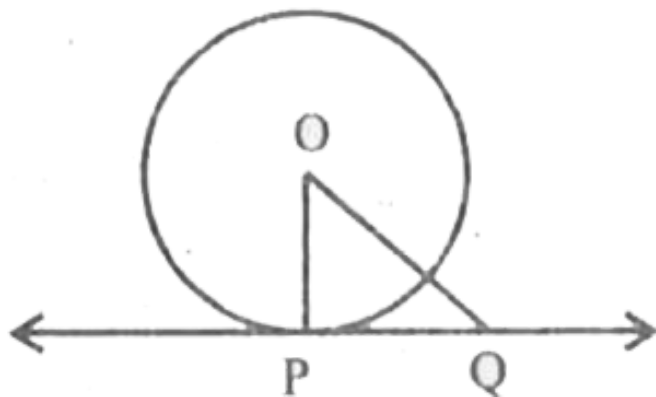(-4, 6) and (-3, -5)

A.

B.

C.

D.

Answer: $-2k = 0$ **or** $k = 0$.

OR

$\therefore$ **Area of the triangle** $= 24$ **square units.**

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

A.

B.

C.

D.

Answer:

29. How many spherical bullets can be made out of a solid cube of lead whose edge measures 44cm , each bullet being 4cm in diameter.

OR

A circus tent is cylinderical upto a height of 3m and conical above it. The diameter of the base is 105m and the slant height of th conial part is 53m, find the total canvas used in making the tent.

A.

B.

C.

D.

Answer: $= \dfrac{242}{2541}$

OR

$9735m^2$

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30. Solve the following system of equations

graphically.

$$x + 3y = 6$$

$$2x - 3y = 12$$

A.

B.

C.

D.

Answer:

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31. How many terms of the A.P. 54 ,51 , 48 .... Are needed to give the sum 513 ?

A.

B.

C.

D.

Answer: $\therefore$ Sum of 18terms as well as that of 19 terms is 513.

32. The sum of two numbers is 15. If the sum of their reciprocals is $\dfrac{3}{10}$. Find the numbers.

Or

Seven years ago keshav's age was five times the square of Raghav's age. Three years hence Raghav's age will be two fifth of Keshav's age. Find their present ages.

A.

B.

C.

D.

Answer: Hence the two numbers are 10 and 5.

OR

Raghav's present age $= (2 + 7)$ **years** $= 9$ **years.**

Keshav's present age $= (5 \times 2^2 + 7) = 27$ **years.**

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33. The first and the last term of an A.P are 17 and 350 respectively. If the common difference is 9, how many terms are there and what is their sum ?

OR

Find the sum of first 51 terms of an A.P whose 2nd term and 3rd term aer 14 and 18 respectively.

A.

B.

C.

D.

Answer: Hence, there are 38 terms in A.P having their sum as 6973.

OR

5610

34. Find the mean for the following data :

C.I	$0 - 10$	$10 - 20$	$20 - 30$	$30 - 40$	$40 - 50$
f	3	5	3	9	5

A.

B.

C.

D.

Answer: Mean $= 28.2$

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35. Prove the Identity

$$\frac{\tan^2 \theta}{\tan^2 \theta - 1} + \frac{\cos ec^2\theta}{\sec^2 \theta - \cos ec^2\theta} = \frac{1}{\sin^2 \theta - \cos^2 \theta}$$

A.

B.

C.

D.

Answer:

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

A.

B.

C.

D.

Answer: