MATHS

BOOKS - CAMBRIDGE MATHS (KANNADA ENGLISH)

MOST LIKELY QUESTION PAPER 8

Questions

1. $10\sec^2 A - 10\tan^2 A =$ _____

A. $\sec^2 A$

B. 10

C. 1

D. 0

Answer: A

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2. The length of the tangent drawn to a circle of radius 3cm from 5cm away from the centre is

A. 4cm

B. 5cm

C. 3cm

D. 2cm

Answer: C::D

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3. A solid piece of copper of dimension $24 \times 49 \times 33$ cm is moulded and recast into a sphere. The radius of the sphere formed is

A. 49 cm

B. 24 cm

C. 21 cm

D. 33 cm

Answer: A::B::C

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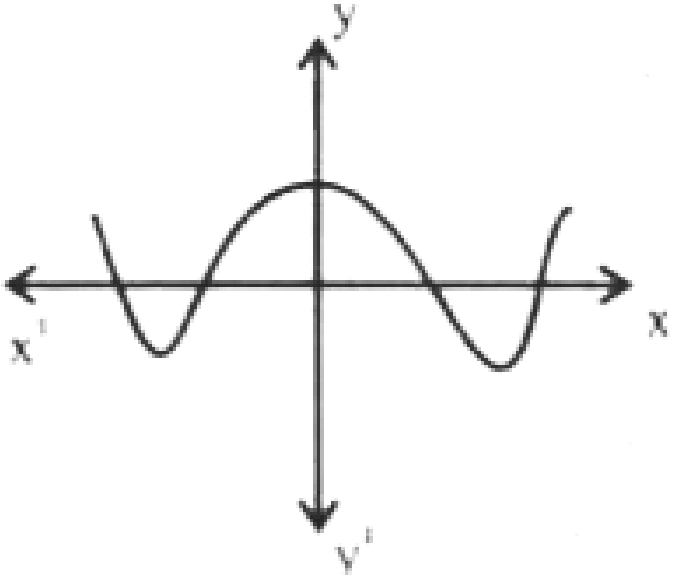
4. The degree of the polynomial in the graph given below is



A. 4

B. 3

C. 1

D. 2

Answer: D

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5. The sum of the n terms of an AP is $2n^2 + 5n$ and its common difference is 6, then its first term is

A. 0

B. 5

C. 2

D. 7

Answer:

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6. In $\Delta PQR, PR = 12cm, QR = 6\sqrt{3}cm, PQ = 6cm,$

The angle Q is

A. 45°

B. 90°

C. 30°

D. 120°

Answer:

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7. A cube numbered 1 to 6 is thrown once, the probability of getting a number divisible by 3 is

A. $\frac{2}{3}$

B. 0

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

D. 1

Answer: A::C

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8. Given

$g(x) = 2x + 1, q(x) = \left(x^3 + 3x^2 - x + 1\right), r(x) = 0$

, Find $p(x)$

A.

B.

C.

D.

Answer: $2x^4 + 7x^3 + x^2 + x + 1$

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9. If the sum of first n odd natural number is 1225, find the value of n.

A.

B.

C.

D.

Answer: $n = 35$

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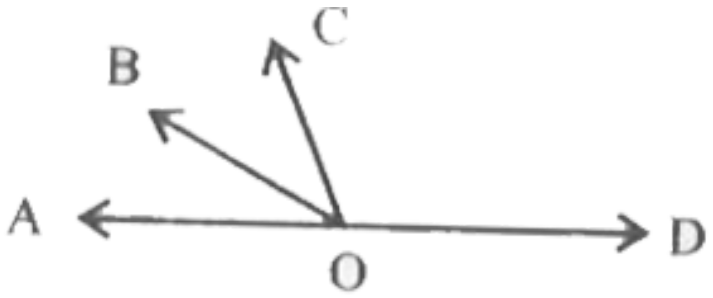
10. In the fig. $\lfloor AOD$ is divided into 2 parts which are in A.P. the smallest angle $\lfloor AOB = 20^\circ$. Find the common difference between each angle.



A.

B.

C.

D.

Answer: 40°

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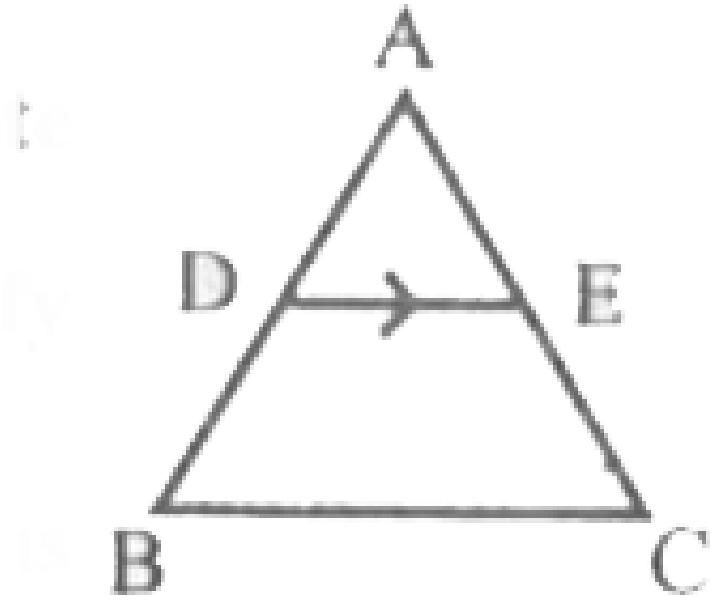
11. In ΔABC, if $DE||BC$, then, $\frac{AB}{AD} = \frac{AC}{AE} = \frac{BC}{DE}$, state the theorem to justify this.



A.

B.

C.

D.

Answer:

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12. Find the largest number which divides 650 and 1170.

A.

B.

C.

D.

Answer:

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13. If $\sin\theta = \frac{7}{25}, \cos\theta = \frac{24}{25}$ find the value of $\sin^2\theta + \cos^2\theta$

A.

B.

C.

D.

Answer: 1

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14. Find the value of $\cos 60^\circ \cos 30^\circ - \sin 60^\circ \sin 30^\circ$

A.

B.

C.

D.

Answer: 0

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15. The T.S.A of a solid hemisphere of radius 21 mm.

A.

B.

C.

D.

Answer: $4158mm^2$

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16. Prove that if x and y are odd positive integers , then $x^2 + y^2$ is even but not divisible by 4.

A.

B.

C.

D.

Answer: $x^2 + y^2$ **is even but not divisible by 4.**

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17. Solve: $100x + 200y = 700$

$200x + 100y = 800$

A.

B.

C.

D.

Answer: $y = 2$

$x = 3$

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18. Find the roots of the quadratic equation $3x^2 - 2\sqrt{6}x + 2 = 0$ by formula method.

A.

B.

C.

D.

Answer: $\therefore$ **The roots of the quadratic equation are** $\frac{\sqrt{6}}{3}, \frac{\sqrt{6}}{3}$.

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19. Find the value of x in which the points (1, -1) (x,1) and (4, 5) are collinear.

A.

B.

C.

D.

Answer: $x = 2$

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20. ABC is a right angled triangle, having $\lfloor B = 90^\circ$.

If $BD = DC$, Show that $AC^2 = 4AD^2 - 3AB^2$

OR

Prove that area of the equilateral triangle described on the side of a square is half the area of the equilateral triangle described on its diagonal.

A.

B.

C.

D.

Answer:

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21. A box contains 90 dices which are numbered from 1 to 90. If one dise is drawn at random from the box, find the probability that it bears

i) two digit number

ii) a perfect square number.

A.

B.

C.

D.

Answer: i) $\frac{9}{10}$

ii) $\frac{1}{10}$

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22. Prove that $\frac{\tan\theta + \sin\theta}{\tan\theta - \sin\theta} = \frac{\sec\theta + 1}{\sec\theta - 1}$

OR

Prove that $(\cos ec\theta - \cot\theta)^2 = \frac{1 - \cos\theta}{1 + \cos\theta}$

A.

B.

C.

D.

Answer:

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23. The sum of the ages of A and B is 85 years. 5 years ago, the age of A was twice that of B. Find the present ages.

OR

A piece of work can be done by 2 men and 7 boys in 4 days. The same piece of work can be done by 4 men and 4 boys in 3 days. How long it would take to do the same work by one man of one boy?

A.

B.

C.

D.

Answer: $\therefore$ **Present age of A is 55 years and** $B = 30$ **years.**

OR

Thus, one man can complete the work in 15 days and one boy can do the work in 60 days.

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24. Find the zeroes of the polynomial $p(y) = y^3 - 5y^2 - 2y + 24$ if it is given that Sum

of the two zeros is 7

A.

B.

C.

D.

Answer: $\therefore$ **When** $\alpha - \beta = 1$**,**

the values are $\alpha = 4, \beta = 3, r = -2$**.**

When $\alpha - \beta \equiv -1$**,**

The value are $\alpha = 3, \beta = 4, r = -2$**.**

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25. The diagonal of a rectangular field is 60 metres more than the shorter side. If the longer side is 30 metres more than the shorter side, find the sides of the field.

OR

Sum of the areas of two squares is $468m^2$. If the difference of their perimeters is 24m, find the sides of two squares.

A.

B.

C.

D.

Answer: $\therefore$ **Shorter side** $= 90m = BO = x$

Longer side $= x + 30 = 90 + 30 = 120m$

Diagonal $= x + 60 = 90 + 60 = 150m$

OR

$x = 6 + y = 6 + 12 = 18m$

The sides of two squares are 18m and 12m.

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26. Show that the points $x(2, -2)y(-2, 1)$ and $z(5, 2)$ are the vertices of a right angled triangle XYZ and also calculate its area.

OR

Find the values of k for which the points

$A(k+1, 2k) B(3k, 2k+3)$ and $C(5k-1, 5k)$ are collinear.

A.

B.

C.

D.

Answer: $12.5cm$

OR

$k = 2$, **or** $k = \frac{1}{2}$

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27. Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line-segment joining the points of contact at the centre.

A.

B.

C.

D.

Answer:

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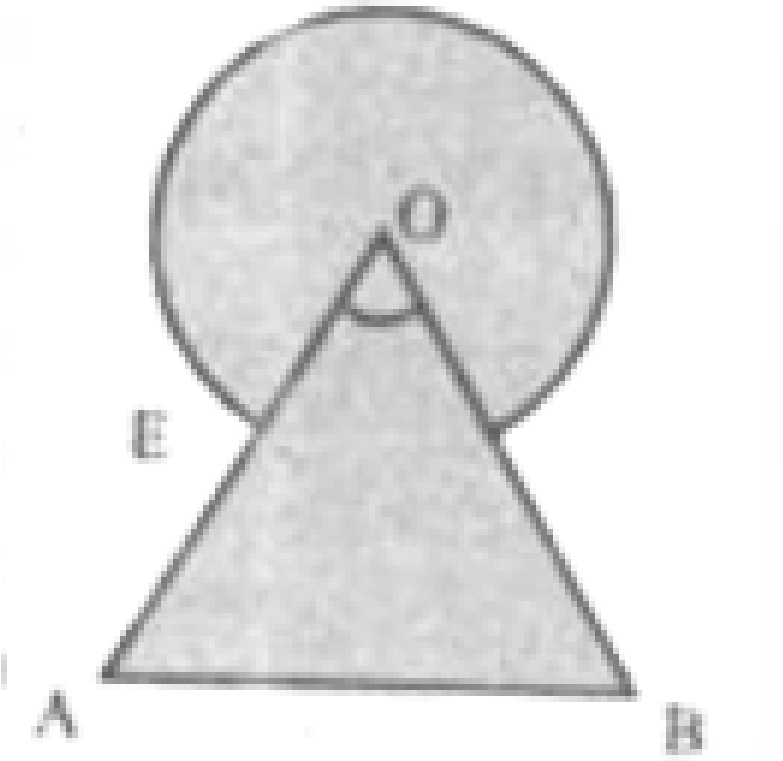
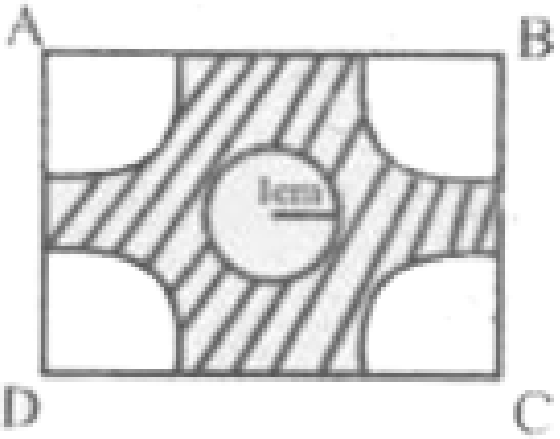
28. Find the area of the shaded region where a circular are of Radius 6 cm has been drawn with the vertex 'O' of an equilateral Triangle OAB of side 12cm as centre.



OR

From each corner of a square of side 4 cm a quadrant of a circle of radius 1cm is cut and also a circle of diameter 2 cm is cut as show in Fig, Find the area of the remaining portion of the square.



A.

B.

C.

D.

Answer: $= \left[\frac{600}{7} + 36\sqrt{3}\right]$ **Sqcms**

OR

$\frac{68}{7}$ **sqcms**

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29. If the median of the distribution given below is 28.5. Find the values of x and y.

Class Interval	Frequency	Cumalative frequency
0 - 10	5	5
10 - 20	x	5 + x
20 - 30	20	25 + x
30 - 40	15	40 + x
40 - 50	y	40 + x + y
50 - 60	5	45 + x + y
Total	60	

A.

B.

C.

D.

Answer: $x = 8$

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30. Solve the pair of equations graphically.

$x + y = 3$ and $3x - 2y = 4$

A.

B.

C.

D.

Answer:

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31. If the sum of first 8 terms of an Arithmetic progression is 136 and that of first 15 terms is 465, then find the sum of first 25 terms.

OR

Ths sum of the 5th and 9th terms of an A.P. is 40

and the sum of the 8th and 14th term is 64. Find the sum of the first 20 terms.

A.

B.

C.

D.

Answer: $S_{25} = 1275$

OR

610

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32. Two poles of equal heights are standing opposite each other on either side of the road, which is 80m wide. From a point between them on the road, the angles of elevation of the top of the poles are 60° and 30°, respectively . Find the height of the poles and the distances of the point from the poles.

A.

B.

C.

D.

Answer: Height of the ploes $= 20\sqrt{3}$ **m**

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33. A circus tent is made of canvas and is in the form of a right circular cylinder and a right circular cone above it. The diameter and height of the cylindrical part of the tent are 126m and 5m respectively. The total height of the tent is 21m. Find the total cost of the canvas used to make the tent when the cost per m^2 of the canvas is Rs. 15.

A.

B.

C.

D.

Answer: $\therefore$ **Cost of canvas** $= Rs.\ 2, 22, 750$

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