MATHS

BOOKS - CAMBRIDGE MATHS (KANNADA ENGLISH)

$MARCH - 2019$

I Four Alternatives Choose The Best Answer

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. $\perp^{\text{lar}}$ lines

C. parallel line

D. co.incident

Answer: A::B::C::D

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3. A straight line passing through a point on a circle is

A. a chord

B. a secant

C. a tangent

D. radius

Answer: A::B::C

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4. If the area of a circle is 49 π sq. Units then its perimeter is

A. 7π units

B. 9π units

C. 14π units

D. 49π units

Answer: A::C::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::D

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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::C

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

A. 0

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

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

D. 1

Answer: A

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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: B

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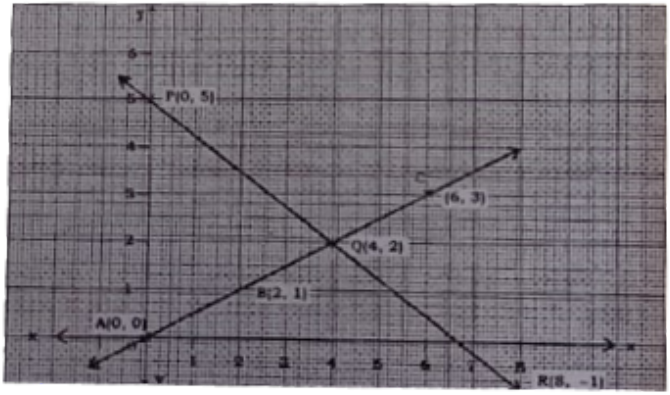
Ii The Given Graph Represents A Pair Of Linear Equations In Two Variabes

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



A.

B.

C.

D.

Answer: one or unique solution.

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

A.

B.

C.

D.

Answer: 5

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3. Find the zeroes of the polynomial P (x) = $x^2 - 3$

A.

B.

C.

D.

Answer: $x = \pm\sqrt{3}$

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

A.

B.

C.

D.

Answer: degree of the polynomial is 3.

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

A.

B.

C.

D.

Answer: -8

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

A.

B.

C.

D.

Answer: C. S. A of frustam of cone $= \pi l(r_1 + r_2)$.

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Iii Answer The Following

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

A.

B.

C.

D.

Answer: $10 \times 99 \quad S_{20} = 990$

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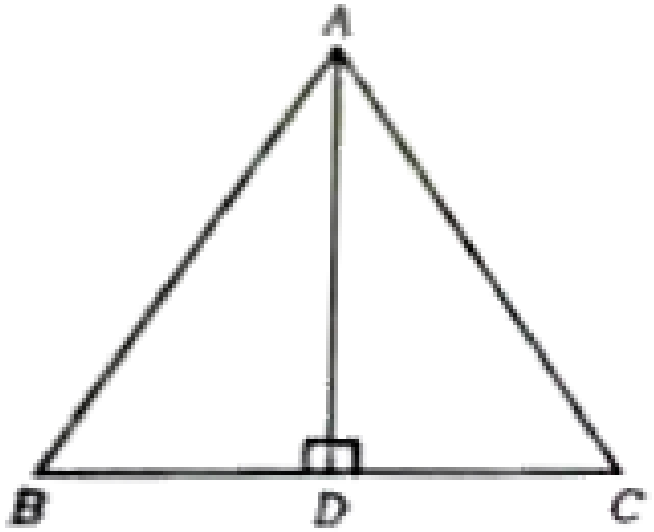
2. In Δ ABC , AD $\perp$ BC and $AD^2 = BD \times CD$.

Prove that $AB^2 + AC^2 = (BD + CD)^2$



A.

B.

C.

D.

Answer:

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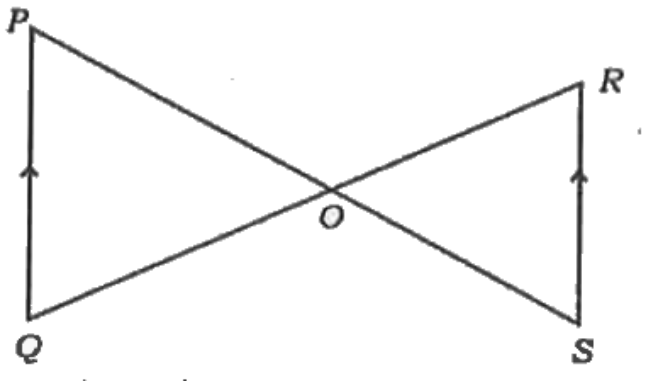
3. In the given figure PQ || RS , prove that $\Delta POQ \sim \Delta SOR.$



A.

B.

C.

D.

Answer: $AE = 7.5cm$

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

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

A.

B.

C.

D.

Answer: $x = 4, y = 1$

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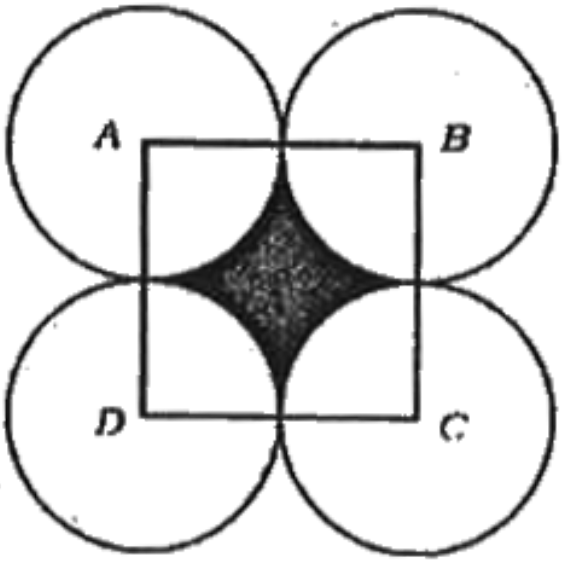
5. In the figure , ABCD is a square of side 14 cm. A, B, C and D are the centres of four congruent circle such that each circle touches externally two of the remaining three circles . Find the area of the

shaded reginon.



A.

B.

C.

D.

Answer: $42cm^2$

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

A.

B.

C.

D.

Answer: Angle b/w the radius $= 180^\circ - 60^\circ = 120^\circ$

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7. 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 .

A.

B.

C.

D.

Answer: $(x, y) = (7, 3)$

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8. Prove that $3 + 2\sqrt{5}$ is an irrational number .

A.

B.

C.

D.

Answer:

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9. 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.

A.

B.

C.

D.

Answer: $b + c = 5a$

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

A.

B.

C.

D.

Answer: (Q) Quotient $= 3x - 5$

(R) Remainder $= 9x + 10$

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

A.

B.

C.

D.

Answer: $x = \frac{3}{2}$ **OR** $x = 1$

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12. 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.

A.

B.

C.

D.

Answer: Breadth $(x) = 7cm$

Length $(3x) = 3 \times 7 = 21$**cm**

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13. If $\cos ec\theta = \frac{13}{12}$ then find the value of $\cos\theta$.

A.

B.

C.

D.

Answer: $\tan\theta = \frac{AC}{BC} = \frac{12}{5}$

OR

$\sin 3\theta + \cos 2\theta = \frac{3}{2}$

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

A.

B.

C.

D.

Answer:

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15. 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 .

A.

B.

C.

D.

Answer: $P(A) = \frac{1}{12}$

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16. 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

A.

B.

C.

D.

Answer: $\therefore$ **volume of dustbin (V)** $= 26994cm^3$**.**

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Iv Answer The Following

1. Prove that the "Length of tangents drawn from an external point a circle are equal".

A.

B.

C.

D.

Answer:

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2. Calculate the median of the following frequency distribution tabel :

Class – interval	*Frequency* (f_i)
1 – 4	6
4 – 7	30
7 – 10	40
10 – 13	16
13 – 16	4
16 – 19	4

A.

B.

C.

D.

Answer: Median $= 8.05$

(OR)

52

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3. During the medical check-up of 35 students of a class, their weights were recorded as follows:

Daily income (in ₹)	Cumulation frequency
Less than 38	0
Less than 40	3
Less than 42	5
Less than 44	9
Less than 46	14
Less than 48	28
Less than 50	32
Less than 52	35

Draw a less than type ogive for the given data.

Hence obtain the median weight from the graph and varify the result by using the formula.

A.

B.

C.

D.

Answer:

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4. A line segment is divided into four parts forming an arithmetic progression . The sum of the lengths of 3 rd and 4 th parts is three times the sum of the lengths of first two part. If the length of fourth part is s14 cm, find the total length of the line segment.

A.

B.

C.

D.

Answer: The required sequence, 2, 5, 8 .....

OR

32 cm

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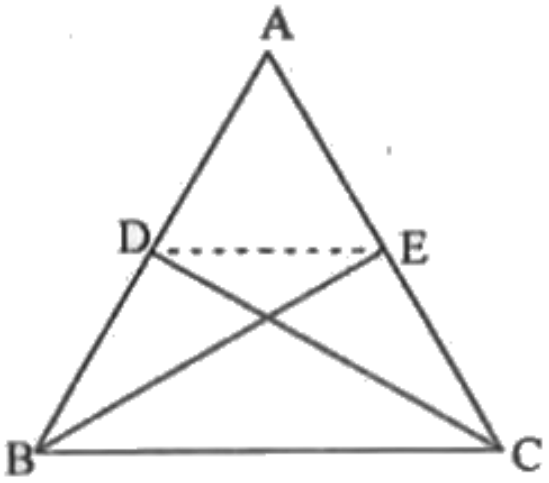
5. D and E are points on sides AB and AC respectively of Δ ABC such that ar (DBC) = ar EBC). Prove that DE||BC.



A.

B.

C.

D.

Answer: $2MN = BC$

OR

$\Rightarrow 32 = 32$

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6. Construct a triangle with sides 5cm, 6cm and 7cm and then construct another triangle whose sides are $\frac{7}{5}$ of the coresponding sides of the first Δ^{la}.

A.

B.

C.

D.

Answer:

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7. find the solution of the pair of linear equations by graphical method.

$x + y = 7$

$3x - y = 1$

A.

B.

C.

D.

Answer:

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8. 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.

A.

B.

C.

D.

Answer: Height of the tower $AB = 6m$

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9. If the area of the circular base of a cylinder is $22cm^2$ and its height is $10cm^2$, then the volume of the cylinder is

A.

B.

C.

D.

Answer: 58.520

OR

$2464cm^2$

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10. Prove that "In a right triangle, the square of the hypotenuse is equal to the sum of squares of the other two sides".

A.

B.

C.

D.

Answer:

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