



MATHS

BOOKS - MBD NCERT SOLUTIONS

MBD NEW STYLE MODEL TEST PAPER

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Set A Section A

1. Express 0.125 in the form $\frac{p}{q}$.



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2. Find the product of zeroes of the quadratic polynomial $3x^2 - x - 4$.



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3. The value of x and y in the equations $5x + 2y = 16$ and $7x - 4y = 2$ are :

A. $x = 2, y = 3$

B. $x = 3, y = 2$

C. $x = 1, y = 2$

D. None of these

Answer: A



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4. The 11th term of the A.P.

$13, 15\frac{1}{2}, 18, 20\frac{1}{2}, \dots$ is :

A. 38

B. $40\frac{1}{2}$

C. 43

D. $45\frac{1}{2}$

Answer: A



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5. Find the common difference of the
A. P. $- 10, - 6, - 2, 2, \dots$



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6. Fill in the blank using the correct word given in bracket.

Alltriangles are similar.

(Isosceles/Equilateral)



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7. The ratio of the areas of two similar triangles is $5:3$, then ratio of their corresponding sides is :

A. $5:3$

B. $3:5$

C. $\sqrt{5}:\sqrt{3}$

D. $\sqrt{3}:\sqrt{5}$

Answer: C



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8. From a point Q , the length of the tangent to a circle is 12 cm and the distance of Q from the centre is 13 cm. The radius of the circle is 13 cm. The radius of the circle is :

A. 12 cm

B. 13 cm

C. 5 cm

D. None of these

Answer: B



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9. Fill in the blank.

The line intersecting the circle in two points is called



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10. Find the distance of point $(-5, 12)$ from the origin.



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11. Find the coordinates of the midpoint of the line segment joining the points $(-3, 4)$ and $(1, -2)$.



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12. Find the values of $\sin 48^\circ - \cos 42^\circ$



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13. Consider a $\triangle ACB$ right angled at C, in which $AB = 29$ units, $BC = 21$ units and $\angle ABC = \theta$. The value of $\sin \theta$ is

A. $\frac{20}{29}$

B. $\frac{21}{29}$

C. $\frac{20}{21}$

D. $\frac{29}{20}$

Answer: A



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14. In a circle of radius 4 cm, an arc subtends an angle of 60° at the centre. Find the length of the arc.



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15. The length, breadth and height of a cuboid are 14 m, 10 m and 5 m. Its volume is :

A. $680m^3$

B. $700m^3$

C. $700m^2$

D. $640m^3$

Answer: B



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16. Find the probability of getting head when coin is tossed once.



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Set A Section B

1. Find a quadratic polynomial, the sum and product of whose zeros is 4 and 1 respectively.



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2. Two poles of heights 7 m and 12 m stand on a plane ground. If the distance between their tops.



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3. If $\sin(A - B) = \frac{1}{2}$ and $\cos(A + B) = \frac{1}{2}$, $0^\circ < (A + B) < 90^\circ$ and $A > B$ then find A and B .



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Set A Section C

1. Solve the following pair of linear equations by cross multiplication method :

$$8x + 5y = 9$$

$$3x + 2y = 4.$$



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2. 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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3. Which term of the A.P. 3, 8, 13, 18, is 78 ?



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4. Check whether $(5, -2)$, $(6, 4)$ and $(7, -2)$ are the vertices of an isosceles triangle.



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5. 12 defective pens are accidentally mixed with 132 good ones. It is not possible to just look at a pen and tell whether or not it is defective. One pen is taken at random from the lot. Determine the probability that the pen taken out is a good pen.



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Set A Section D

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



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2. An observer 1.5 m tall is 28.5 m away from a chimney. The angle of elevation of the top of the chimney from her eyes is 45° . What is the height of the chimney ?



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3. Prove that :

$$\sqrt{\frac{1 + \sin A}{1 - \sin A}} = \sec A + \tan A.$$



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4. 2 cubes each of volume 64cm^3 joined end to end. Find the surface area of the resulting cuboid.



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Set B Section A

1. Express 0.175 in the form $\frac{p}{q}$.



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2. Find the sum of the zeroes of quadratic polynomial $4x^2 - 4x + 1$.



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3. The value of x and y in the equation

$3x - y = 13$ and $x - y = 4$ is :

A. $x = 1, y = 2$

B. $x = \frac{-1}{2}, y = \frac{-9}{2}$

C. $x = \frac{9}{2}, y = \frac{1}{2}$

D. $x = \frac{1}{2}, y = \frac{-9}{2}$

Answer: C



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4. If 11th term of an A.P. is 38 and 16th term is 73, its first term is :

A. 7

B. 32

C. - 32

D. $45\frac{1}{2}$.

Answer: C



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5. Find the common difference of the A.P. 10, 7, 4,



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6. Find the blank using the correct word given in bracket :

All squares are(similar, Congruent)



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7. The ratio of the area of two similar triangle is 4:5, the ratio of their corresponding sides are :

A. 4:5

B. 16:25

C. $2:\sqrt{5}$

D. 5:4

Answer:



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8. If the length of a tangent drawn from a point P to the circle is 24 cm and the distance of the point from the centre is 25 cm, then length of the radius is :

A. 12 cm

B. 12.5 cm

C. 1 cm

D. 7 cm.

Answer: B



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9. Fill in the blank :

From a point on a circle Tangent (s) can be drawn.



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10. Find distance of point $(-4, 3)$ from the origin.



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11. Find the mid point of the line segment joining the points $(-2, 7)$ and $(4, -3)$.



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12. Evaluate : $\operatorname{cosec} 31^\circ - \sec 59^\circ$.



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13. A $\triangle ABC$ in which angle C is right angle, $AB = 29$ units, $BC = 21$ units and $\angle ABC = \theta$.

The value of $\cos \theta$ is :

A. $\frac{20}{29}$

B. $\frac{21}{29}$

C. $\frac{20}{21}$

D. $\frac{21}{20}$

Answer: B



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14. Find the length of the arc of a sector of a circle with radius 6 cm whose angle is 60° .



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15. The length, breadth and height of a cuboid is 12 m, 8 m and 5 m respectively, Its volume is :

A. $960m^3$

B. $480m^2$

C. $480m^3$

D. None of these.

Answer: C



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16. A die is thrown once. Find the probability of getting an odd number.



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Set B Section B

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



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2. Two poles of heights 6 m and 12 m stand on a plane ground. If the distance between the feet of the poles is 8 m, find the distance between their tops.



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3. Evaluate : $\sin 60^\circ \cos 30^\circ + \sin 30^\circ \cos 30^\circ$.



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Set B Section C

1. Solve the following pair of linear equations by the substitution method:

$$s - t = 3$$

$$\frac{s}{3} + \frac{t}{2} = 6$$



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2. Find two consecutive odd positive integers sum of whose square is 290.



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3. How many multiple of 4 lie between 10 and 250 ?



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4. Find the point on the x -axis which is equidistant from $(2, -5)$ and $(-2, 9)$.



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5. A bag contains 3 red balls and 5 black balls. A ball is drawn at random from the bag. What is the probability that the ball drawn is (i) red?
(ii) not red?



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Set B Section D

1. Is it possible to design a rectangular mango grove whose length is twice its breadth, and the area is $800m^2$? If so, find its length and breadth.



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2. From a point P on the ground the angle of elevation of the top of a 10 m tall building is 30° . A flag is hoisted at the top of building

and the angle of elevation of the top of the flagstaff from P is 45° . Find the length of the flagstaff and the distance of the building from the point? (You may take $\sqrt{3} = 1.732$)



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3. Prove that :

$$\frac{\sin \theta - 2 \sin^3 \theta}{2 \cos^3 \theta - \cos \theta} = \tan \theta.$$



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4. A cubical block of side 7 cm is surmounted by a hemisphere. What is the greatest diameter the hemisphere can have? Find the surface area of the solid.



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Set C Section A

1. Express 2.556 in the form $\frac{p}{q}$.



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2. Find the product of the zeros of the quadratic polynomial $x^2 - 2x - 8$.



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3. The value of x and y in the equation $0.2x + 0.3y = 1.3$ and $0.4x + 0.5y = 2.3$ are :

A. $x = 2, y = 3$

B. $x = 3, y = 2$

C. $x = -2, y = -3$

D. $x = -3, y = -2$

Answer: A



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4. 3rd term of an A.P. is 12 and 10th term is 26,
then its 20th term is :

A. 46

B. 52

C. 50

D. 44

Answer: A



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5. Find the common difference of the A.P. 2, 7, 12,



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6. Fill in the blank using the correct word given in bracket :

All circle are



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7. If the ratio of the sides of two similar triangle is 3 : 5, then ratio of the areas is :

A. $\sqrt{3} : \sqrt{5}$

B. 9 : 25

C. 5: 3

D. None of these.

Answer: B



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8. If the distance of point P from the centre of the circle is 13 cm and the radius of the circle is 5 cm, then length of the tangent drawn from P to the circle is :

A. 8 cm

B. 6.5 cm

C. 9 cm

D. 12 cm.

Answer: D



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9. A circle can haveparallel tangents at the most.



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10. Find the distance between the point $(-4, 6)$ and $(-6, 10)$



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11. Find the midpoint of the line joining the points $(4, -1)$ and $(-2, -3)$.



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12. Evaluate :

$$\frac{\tan 26^\circ}{\cot 64^\circ}$$



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13. Angle C of a $\triangle ACB$ is right angle in which

$AB = 29$ units, $BC = 21$ units and $\angle ABC = \theta$

the value of $\tan \theta$ is :

A. $\frac{21}{29}$

B. $\frac{20}{29}$

C. $\frac{20}{21}$

D. $\frac{29}{20}$.

Answer: C



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14. In a circle of radius 21 cm and arc subtends an angle of 60° at the centre. Find the area of the sector.



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15. The length, breadth and height of the cuboid are 10 m, 7 m and 5 m respectively the volume of the cuboid is :

A. $22m^3$

B. $210m^3$

C. $350m^3$

D. None of these.

Answer: C



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16. A die is thrown once, what is the probability of getting a prime number?



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Set C Section B

1. Find the zeroes of the quadratic polynomial $x^2 - 3$ and verify the relationship between the zeroes and coefficients.



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2. Evaluate : $2 \tan^2 45^\circ + \cos^2 30^\circ - \sin^2 60^\circ$



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Set C Section C

1. Solve the following pair of linear equations

by the substitution method:

$$\frac{3x}{2} - \frac{5y}{3} = -2$$

$$\frac{x}{3} + \frac{y}{2} = \frac{13}{6}$$





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2. Find the roots of the equation $5x^2 - 6x - 2 = 0$ by the method of completing squares.



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3. Which term of the A.P. 3, 15, 27, 39,will be 132 more than its 54th term?



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4. Find the value of y for which the distance between the points $P(2, -3)$ and $Q(10, y)$ is 10 units.



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5. Harpreet tosses two different coins simultaneously (say one is of Rs 1 and the other of Rs 2). What is the probability that she gets atleast one head ?



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Set C Section D

1. Find two consecutive odd positive integers, sum of whose squares is 290.



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2. The angles of depression of the top and the bottom of an 8m tall building from the top of a multistoreyed building are 30° and 45° respectively. Find the height of the

multistoreyed building and the distance between the two buildings.



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3. Prove that $\frac{1 + \sec A}{\sec A} = \frac{\sin^2 A}{1 - \cos A}$.



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4. A cone of height 24 cm and radius of base 6 cm is made of modelling clay. A child reshapes

it in the form of a sphere. Find the radius of the sphere.



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Set D Section A

1. Express 0.225 in the term of $\frac{p}{q}$



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2. Find the sum of the zeroes of quadratic polynomial $x^2 + 3x - 6$.



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3. The values of x and y in the equations

$$\sqrt{2}x + \sqrt{3}y = 0 \text{ and } \sqrt{3}x - \sqrt{8}y = 0 \text{ are}$$

$$\sqrt{3}x - \sqrt{8}y = 0 \text{ are :}$$

A. $x = 1, y = 2$

B. $x = 0, y = 2$

C. $x = 0, y = 0$

D. $x = 1, y = 0.$

Answer: C



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4. Sum of first 20 positive integers will be :

A. 180

B. 190

C. 200

D. 210

Answer: D



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5. Find the common difference of the A.P. 0.6,
1.7, 2.8, 3.9,..... .



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6. Fill in the blanks using the correct word given in bracket :

All square are



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7. Sides of two similar triangle are in the ratio 2: 3 Areas of these triangles are in the ratio :

A. $\sqrt{2} : \sqrt{3}$

B. 2: 3

C. 4: 9

D. None of these.

Answer: C



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8. Maximum number of tangents drawn from a point on the circle is :

A. 1

B. 2

C. 3

D. None of these.

Answer: A



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9. The common point of a tangent to a circle and the circle is called



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10. Find the distance of point $(5, -7)$ from the origin.



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11. Find the midpoint of the line segment joining the points $(2, -5)$ and $(-2, 9)$.



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12. Evaluate : $\tan 48^\circ \tan 23^\circ \tan 42^\circ \tan 67^\circ$.



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13. Angle C of $\triangle ACB$ in right angle, $AB = 29$ units, $BC = 2$ units and $\angle ABC = \theta$. The value of $\cos \theta$ is :

A. $\frac{21}{29}$

B. $\frac{20}{29}$

C. $\frac{20}{21}$

D. $\frac{21}{20}$

Answer: D



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14. A chord of a circle of radius 10 cm subtends a right angle at the centre. Find the area of the corresponding sector.



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15. The length, breadth and height of a cuboid are 13m, 10m and 5m respectively. Volume of cuboid is :

A. $135m^3$

B. $650m^2$

C. $650m^3$

D. $450m^3$.

Answer: C



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16. A die is thrown once. Find the probability of getting a number more than 4.



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Set D Section B

1. Find the zeroes of the quadratic polynomial $x^2 + 7x + 10$ and verify the relationship between its zeroes and coefficients.

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2. Evaluate : $\frac{\cos 45^\circ}{\sec 30^\circ + \operatorname{cosec} 30^\circ}$

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Set D Section C

1. Solve the following pair of linear equations :

$$x + y = 5$$

$$2x - 3y = 4.$$



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2. Find the roots of $3x^2 - 5x + 2 = 0$ by the method of completing the square.



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3. If the 3rd and 9th terms of an A.P. Are 4 and -8 respectively, which term of this A.P. Is zero?



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4. Find the relation between x and y such that the points (x, y) is equidistant from the point $(3, 6)$ and $(-3, 4)$.



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5. A box contains 3 blue, 2 white and 4 red marbles. If a marble is drawn at random from the box, what is

(i) white ? (ii) blue ? (iii) red?



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Set D Section D

1. The sum of the reciprocals of Rehman's age (in years) 3 years ago and 5 years from now is

$\frac{1}{3}$. Find his present age.



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2. A kite is flying at a height of 60 m above the ground. The string attached to kite is temporarily tied to a point on the ground. The inclination on the string with the ground is 60° . Find the length of the string assuming that there is no slack in the string.



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3. Prove that

$$\sec A(1 - \sin A)(\sec A + \tan A) = 1.$$



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4. A metallic sphere of radius 4.2 cm is melted and recast into the shape of cylinder of radius 6 cm. Find the height of the cylinder.



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