MATHS

BOOKS - X BOARDS

QUESTION PAPER 2022 TERM 1 SET 2 BASIC

Section A

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1. If $xy = 180$ and $HCF(x, y) = 3,$ then LCM(x, y) is

A. 177

B. 183

C. 60

D. 63

Answer:

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2. The prime factorisation of 156 is :

A. $2^2 \times 3 \times 13$

B. $2^2 \times 3^2 \times 13$

C. $6^2 \times 2^2$

D. $2^3 \times 3 \times 13$

Answer:

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3. The decimal expansion of the rational number $\dfrac{23}{2^2 \times 5}$ will terminate after how many places decimals ?

A. 1

B. 2

C. 3

D. 5

Answer:

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4. The number of quadratic polynomials having zeroes -2 and 5 is :

A. 1

B. 2

C. 3

D. more than 3

Answer:

5. If 1 is one of the zeroes of the polynomial

$p(x) = ax^2 - bx + 1$, then :

A. $a + 1 = b$

B. $a - b = 0$

C. $a - b - 1 = 0$

D. $a + b = 1$

Answer:

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6. The quadratic polynomial whose zeroes are

2 and 3 is :

A. $x^2 + 5x + 6$

B. $x^2 + 5x - 6$

C. $x^2 - 5x + 6$

D. $x^2 - 5x - 6$

Answer:

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7. The pair of equations $y = 0$ and $y = -7$

has

A. one solution

B. two solutions

C. no solutions

D. infinitely many solutions

Answer:

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8. One equation of a pair of dependent linear equations is $-5x + 7y = 2$. The second equation can be :

A. $10x + 14y + 4 = 0$

B. $-10x - 14y + 4 = 0$

C. $-15x + 21y + 6 = 0$

D. $10x - 14y = -4$

Answer:

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9. If $ax + by = a^2 - b^2$ and $bx + ay = 0$, then the value of $(x + y)$ is :

A. $a^2 - b^2$

B. $b - a$

C. $a - b$

D. $a^2 + b^2$

Answer:

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10. The distance between the points $A(0, 6)$ and $B(0, -2)$ is

A. 6 units

B. 8 units

C. 4 units

D. 2 units

Answer:

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11. If in two Δs DEF and PQR, $\angle D = \angle Q$ and $\angle R = \angle E$, then which of the following is not true?

A. $\dfrac{EF}{PR} = \dfrac{DF}{PQ}$

B. $\dfrac{DE}{PQ} = \dfrac{EF}{RP}$

C. $\dfrac{DE}{QR} = \dfrac{DF}{PQ}$

D. $\dfrac{EF}{RP} = \dfrac{DE}{QR}$

Answer:

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12. Two isosceles triangles have equal vertical

angles and their areas are in the ratio $16 : 25.$

Then, the ratio of their corresponding height is :
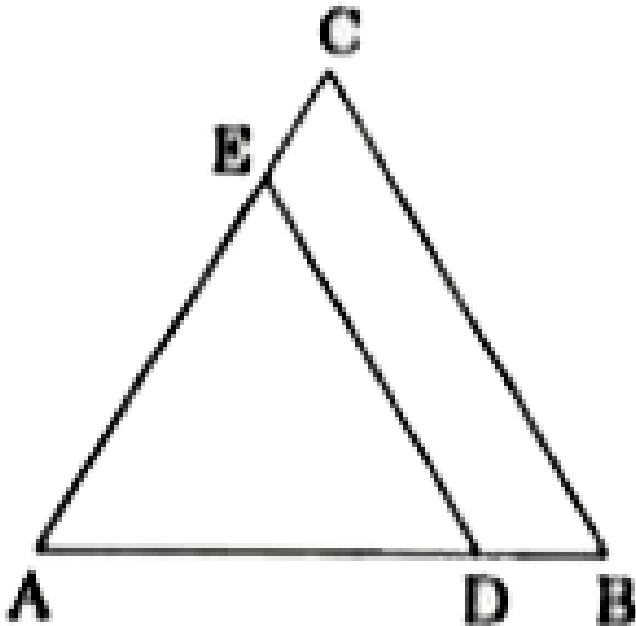
A. $4:5$

B. $5:4$

C. $3:6$

D. $5:7$

Answer:

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13. In the given figure, DE||BC. If AD = x, DB = (x -

2), AE = (x + 2) and EC = (x - 1), then the value of

x is :

A. 2

B. 4

C. 8

D. 16

Answer:

14. If $\tan \theta = \sqrt{3}$, then $\sec \theta$ is :

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

B. 2

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

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

Answer:

15. The value of $\left[\sin^2 \theta + \dfrac{1}{1 + \tan^2 \theta} \right]$ is :

A. 0

B. $\cos \theta$

C. $-\sin \theta$

D. 1

Answer:

16. If $\theta = 45°$, then $\sec\theta\cot\theta - \mathrm{cosec}\theta\tan\theta$ is

:

A. 0

B. 1

C. 2

D. 3

Answer:

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17. Which of the following cannot be the probability of an event ?

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

B. 0.1

C. 3%

D. $\dfrac{17}{16}$

Answer:

18. If the probability of an event is m, then the probability of its complementary event is :

A. m-1

B. m

C. $1 - m$

D. $1 - \dfrac{1}{m}$

Answer:

19. A dice is thrown once.Find the probability of getting an even prime number?

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

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

C. $\dfrac{1}{6}$

D. 0

Answer:

20. A letter is drawn at random from the letters of the word MIRROR. Which are the letters that have equal probabilities of being drawn ?

A. I and O

B. M,I,R

C. M,I,O

D. M,I,O,R

Answer:

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1. Find the HCF of 30,72 and 432.

A. 2

B. 3

C. 6

D. 4

Answer:

2. Write the condition to be satisfied by q so that a rational number $\dfrac{p}{q}$ has a terminating decimal expansion.

A. $q = 2^m 3^n$, m ,n are non-negative

   integers

B. $q = 2^m + 3^n$, m , n are non -negative

   integers

C. $q = 2^m 5^n$, m,n are non-negative

   integers

D. $q = 2^m + 5^n$, m,n are non-negative

   integers

Answer:

3. The smallest number by which $\frac{7}{10}$ should be multiplied so that its decimal expansion terminates after two decimal places is :

A. $\frac{20}{7}$

B. $\frac{200}{7}$

C. $\frac{1}{5}$

D. $\frac{1}{7}$

Answer:

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4. Three bells ring at intervals of 4,7 and 14 minutes. All three range at 6am am. When will they ring together again ?

    A. 6:04 a.m.

    B. 6:07 a.m.

    C. 6: 14 a.m.

    D. 6:28 a.m.

Answer:

5. If (-2) is a zero of the polynomial p(x) =

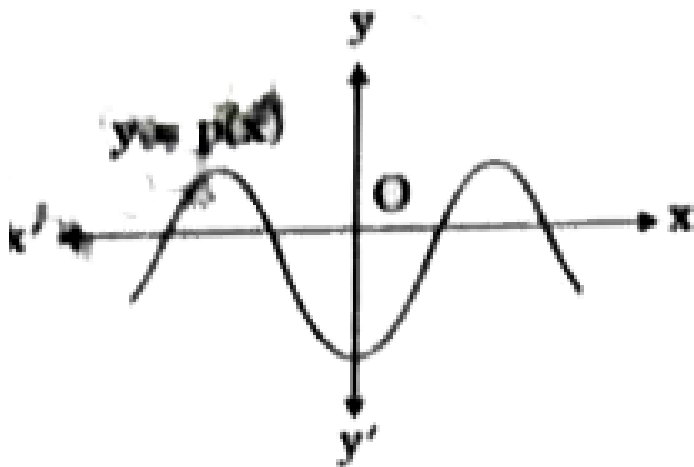$x^2 + ax + 2b$ and a+b =4, then :

A. a=1 , b=3

B. a=3, b=1

C. a=-1 , b=5

D. a=5, b=-1

Answer:

6. The graph of the polynomial y = p(x) is given

in the figure. The number of zeroes of p(x) is :

A. 2

B. 4

C. 3

D. 1

Answer:

7. Which of the following condition is correct for the graph of a quadratic polynomial p(x) = $ax^2 + bx + c$ to be an upward parabola?

A. $a > 0$

B. $b > 0$

C. $d < 0$

D. $n < 0$

Answer:

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8. Write the number of solutions of the following pair of linear equations:

$$x + 3y - 4 = 0, \quad 2x + 6y = 7$$

A. one

B. two

C. infinitely many

D. zero

Answer:

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9. If $x = a$ and $y = b$ is the solution of the equations $x - y = 2$ and $x + y = 4$, then the values of a and b are, respectively

A. 3 and 1

B. 3 and 5

C. 5 and 3

D. -1 and -3

Answer:

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10. The area of the triangle formed by the lines

$2x + 3y = 12, x - y - 1 = 0$ and $x = 0$ (as

shown in Figure), is 7sq. units (b) 7.5 sq. units

(c) 6.5 sq. units (d) 6 sq. units

A. 7 sq units

B. 5 sq units

C. 6.5 sq units

D. 6 sq units

Answer:

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11. If the greater of the two supplementary angles exceeds the smaller by $18°$, then the greater angle is of measure :

A. $81°$

B. $54°$

C. $36°$

D. $99°$

Answer:

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12. In a $\triangle ABC$, $\angle A = 90°$, AB = 5 cm and AC

= 12 cm, If $AD \perp BC$, then AD is equal to :

A. $\dfrac{13}{2}$ cm

B. $\dfrac{60}{13} cm$

C. $\dfrac{13}{60} cm$

D. $\dfrac{2\sqrt{15}}{13}$ cm

Answer:

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13. $\triangle ABC \sim \triangle DEF$ such that

$DE = 3cm, EF = 2cm, DF = 2.5cm$ and

$BC = 4cm.$ Find the perimeter of $\triangle ABC.$

A. 18 cm

B. 20 cm

C. 12 cm

D. 15 cm

Answer:

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14. The lengths of the diagonals of a rhombus are 16 cm and 12 cm. Then, the length of the side of the rhombus is

    A. 4 cm

    B. 2 cm

    C. 10 cm

    D. 14 cm

Answer:

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15. The length of the altitude of an equilateral triangle of side 8 cm is :

A. $2\sqrt{3}cm$

B. $4\sqrt{3}cm$

C. $8\sqrt{3}cm$

D. $16\sqrt{3}cm$

Answer:

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16. The perimeter of the triangle with vertices

(0, 4), (0, 0) and (3, 0) is

A. 5 units

B. 11 units

C. 12 units

D. $\left(7 + \sqrt{5}\right)$ units

Answer:

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17. If $\tan A = \dfrac{4}{3}$, then $\cos ecA$ is :

A. $\dfrac{5}{4}$

B. $\dfrac{4}{3}$

C. $\dfrac{3}{5}$

D. $\dfrac{5}{7}$

Answer:

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18. If $\sin(A + B) = \cos(A - B) = 1$, then:

A. $A = B = 0^\circ$

B. $A = B = 45^\circ$

C. $A = 60^\circ$, $B = 30^\circ$

D. $A = 90^\circ$, $B = 60^\circ$

Answer:

19. If $\csc\theta - \cot\theta = \dfrac{1}{3}$, then the value of $\csc\theta + \cot\theta$ is :

A. 1

B. 2

C. 3

D. 4

Answer:

20. In a single throw a pair of dice, the probability of getting the sum a perfect square is $\frac{1}{18}$ (b) $\frac{7}{36}$ (c) $\frac{1}{6}$ (d) $\frac{2}{9}$

A. $\frac{1}{18}$

B. $\frac{7}{36}$

C. $\frac{1}{36}$

D. $\frac{2}{9}$

Answer:

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1. A rough co-ordinate map of Lahiri's locality

is shown below :

A	Furniture shop
B	Laundry
C	Post Office
D	Kindergarten schoo
E	Grocery store
F	Hotel
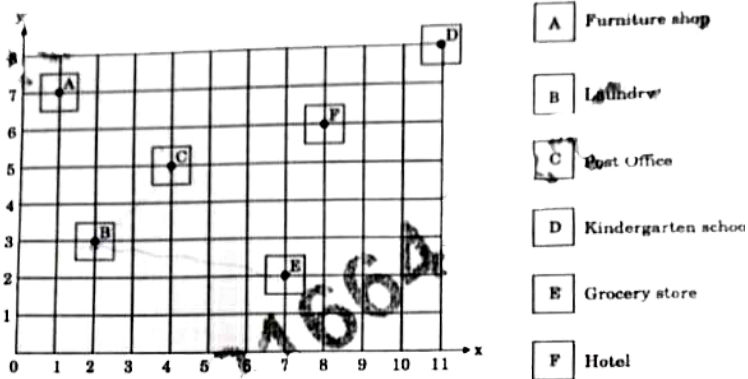
The coordinates of the grocery store are :

A. (11,8)

B. (7,2)

C. (2,7)

D. (8,6)

Answer:

2. A rough co-ordinate map of Lahiri's locality is shown below :
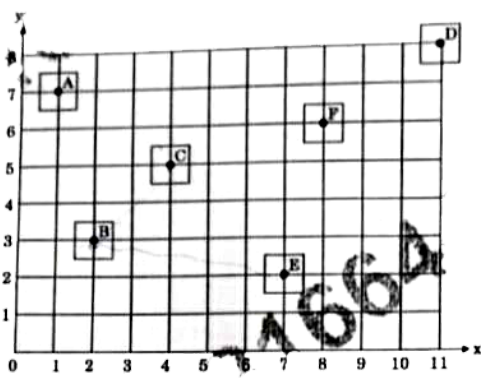
A	Furniture shop
B	Laundry
C	Post Office
D	Kindergarten school
E	Grocery store
F	Hotel

The distance between the hotel and the post office is :

A. 5 units

B. $\sqrt{5}$ units

C. $\sqrt{17}$ units

D. 17 units

Answer:

3. A rough co-ordinate map of Lahiri's locality is shown below :

A	Furniture shop
B	Laundry
C	Post Office
D	Kindergarten schoo
E	Grocery store
F	Hotel
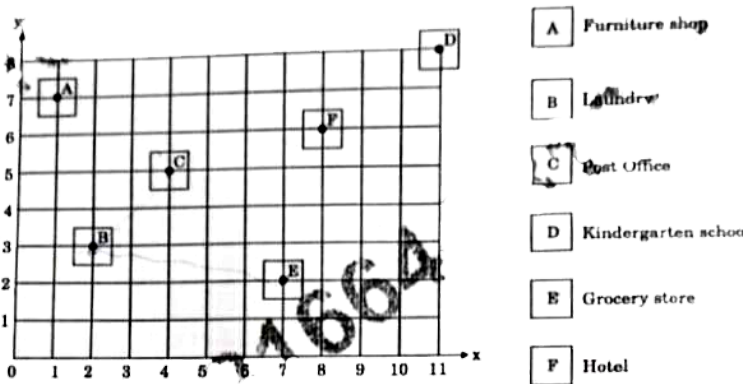
If a point (x,y) is equidistant from both the laundary and the post office , then :

A. $x = y = 4$

B. $x + y = 7$

C. $x + y = -7$

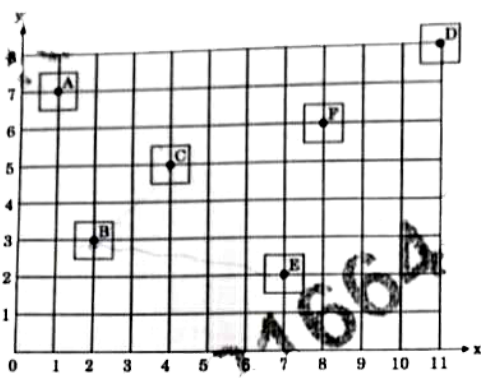D. $x - y = 7$

Answer:

4. A rough co-ordinate map of Lahiri's locality is shown below :

A	Furniture shop
B	Laundry
C	Post Office
D	Kindergarten schoo
E	Grocery store
F	Hotel

Anuradha goes first to the laundry from the post office , and then from there to the grocery store . The total distance travelled by her is :
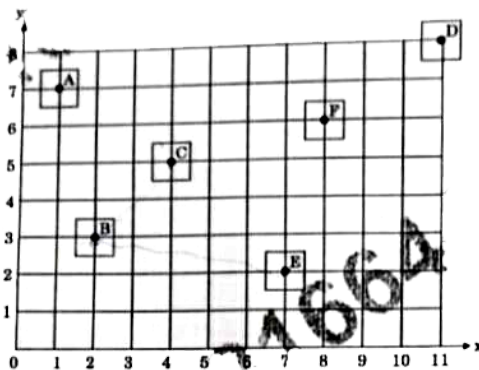
A. 34 units

B. 28 units

C. $\left(\sqrt{4} + \sqrt{6}\right)$ units

D. $\left(\sqrt{8} + \sqrt{26}\right)$ units

Answer:

5. A rough co-ordinate map of Lahiri's locality

is shown below :

A	Furniture shop
B	Laundry
C	Post Office
D	Kindergarten school
E	Grocery store
F	Hotel

The co-ordinates of the reflection of the post office on the y-axis are :

A. $(-4, -5)$

B. (4,-5)

C. (-4,5)
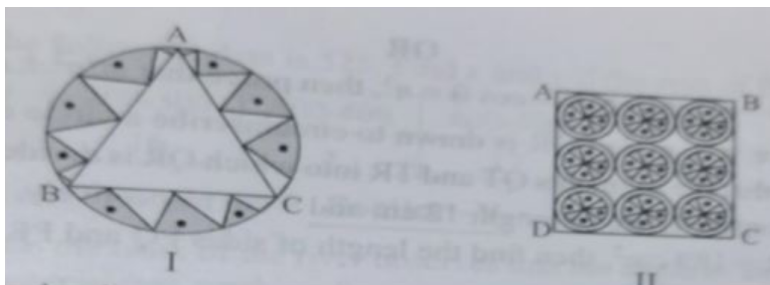
D. (0,5)

Answer:

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6. Pookalam is the flower bed or flower pattern designed during Onam in Kerala. It is similar as Rangoli in North India and Kolam in Tamil Nadu.

During the festival of Onam , your school is planning to conduct a Pookalam competition. Your friend who is a partner in competition , suggests two designs given below.

Observe these carefully.

Design I: This design is made with a circle of radius 32cm leaving equilateral triangle ABC in the middle as shown in the given figure.

Design II: This Pookalam is made with 9 circular design each of radius 7cm.

Refer Design I :

The side of equilateral triangle is

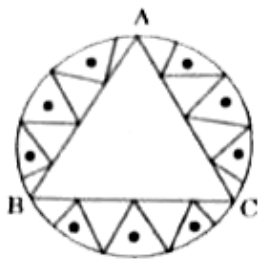A. $22\sqrt{3}cm$

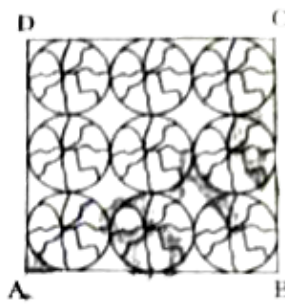B. $32\sqrt{3}cm$

C. $48cm$

D. $64cm$

Answer:

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7. Pookalam is the flower bed or flower pattern designed during Onam in Keral. It is similar to 'Rangoli' in North India and 'Kolam' in Tamil Nadu. During the festival of Onam , you school is planning to conduct a Pookalam competition. Your friend who is a partner in competition , suggests two design given below :

Design-I

Design-II

Design -I : The design is made with a circle of

radius 32 cm leaving an equilateral triangle

ABC in the middle as shown in the figure .

Design-II : The Pookalam is made with 9

circular designs, each of radius 7 cm , enclosed

in a square

Refer to Design -I

The length of the altitude of $\triangle ABC$ is :

A. 8 cm

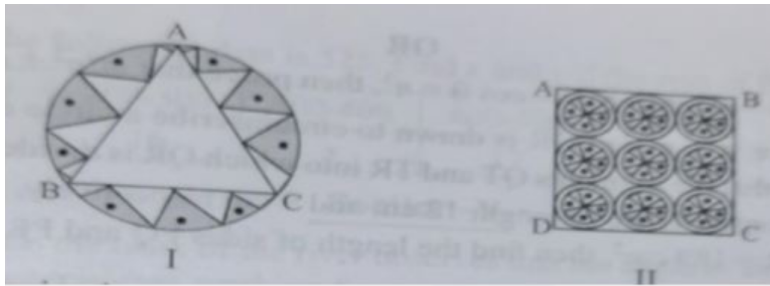B. 12 cm

C. 48 cm

D. 52 cm

Answer:

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8. Pookalam is the flower bed or flower pattern designed during Onam in Kerala. It is similar as Rangoli in North India and Kolam in Tamil Nadu.

During the festival of Onam , your school is planning to conduct a Pookalam competition. Your friend who is a partner in competition , suggests two designs given below.

Observe these carefully.

Design I: This design is made with a circle of radius 32cm leaving equilateral triangle ABC in the middle as shown in the given figure.

Design II: This Pookalam is made with 9 circular design each of radius 7cm.

Refer Design II :

The area of square is

A. 1264 sq cm
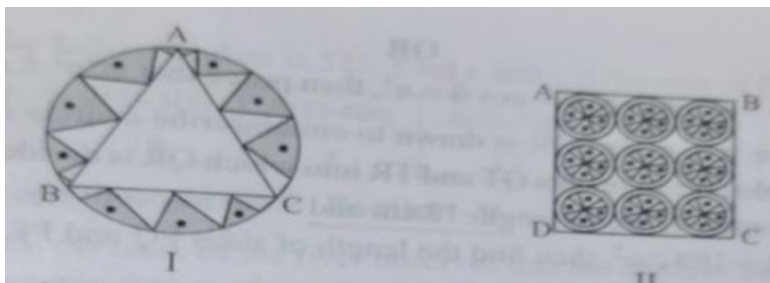
B. 1764 sq cm

C. 1830 sq cm

D. 1944 sq cm

Answer:

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9. Pookalam is the flower bed or flower pattern designed during Onam in Kerala. It is similar as Rangoli in North India and Kolam in Tamil Nadu.

During the festival of Onam , your school is planning to conduct a Pookalam competition. Your friend who is a partner in competition , suggests two designs given below.

Observe these carefully.

Design I: This design is made with a circle of radius 32cm leaving equilateral triangle ABC in the middle as shown in the given figure.

Design II: This Pookalam is made with 9 circular design each of radius 7cm.

Refer Design II :

Area of each circular design is

A. 124 sq cm

B. 132 sq cm

C. 144 sq cm

D. 154 sq cm

Answer:

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10. Pookalam is the flower bed or flower pattern designed during Onam in Kerala. It is similar as Rangoli in North India and Kolam in Tamil Nadu.

During the festival of Onam , your school is planning to conduct a Pookalam competition. Your friend who is a partner in competition , suggests two designs given below.

Observe these carefully.
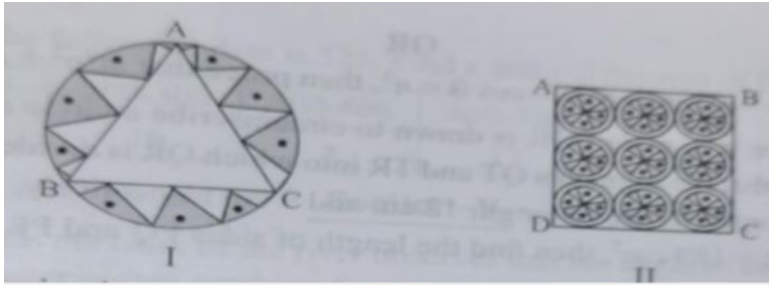
Design I: This design is made with a circle of radius 32cm leaving equilateral triangle ABC in the middle as shown in the given figure.

Design II: This Pookalam is made with 9 circular design each of radius 7cm.

Refer Design II :

Area of the remaining portion of the square ABCD is

A. 378 sq cm

B. 260 sq cm

C. 340 sq cm

D. 278 sq cm

Answer:

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