



MATHS

BOOKS - EDUCART PUBLICATION

SAMPLE PAPER 11 (SELF - ASSESSMENT)

Section A

1. The simplest form of $0.\bar{6}$ is :

A. $\frac{66}{99}$

B. $\frac{6}{9}$

C. $\frac{6}{99}$

D. $\frac{66}{9}$

Answer:



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2. If $(x + 1)$ is a factor of the polynomial $2x^2 + 2ax + 5x + 10$, then the value of a is :



3. If $\sin A = \frac{1}{2}$, then find the value of $\cos A$.

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

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

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

D. 1

Answer:



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4. The probability that a leap year, selected at random, will contain 53 Sunday is:

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

B. $\frac{2}{7}$

C. $\frac{3}{7}$

D. $\frac{4}{7}$

Answer:



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5. Find the value of k for which the system of linear equations $x + ky = 0$, $2x - y = 0$ has unique solution.

A. $k \neq \frac{1}{2}$

B. $k \neq \frac{3}{2}$

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

D. $k \neq -\frac{3}{2}$

Answer:



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6. If $\tan x = \sin 45^\circ \cos 45^\circ + \sin 30^\circ$ then x is equal to

A. 30°

B. 45°

C. 60°

D. 90°

Answer:



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7. If $504 = 2^m \times 3^n \times 7^p$, then the value of $m + n - p$ is

A. 2

B. 4

C. 7

D. 11

Answer:



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8. What is the area of a circle which can be inscribed in a square of side 8 cm ?

A. $9\pi cm^2$

B. $12\pi cm^2$

C. $16\pi cm^2$

D. $36\pi cm^2$

Answer:



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9. Find the distance AB, where A and B are the points $(-6,7)$ and $(-1,-5)$ respectively.

A. 12

B. 13

C. 21

D. 19

Answer:



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10. What is the smallest odd composite number ?

A. 1

B. 5

C. 9

D. 12

Answer:



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11. If M $(5a,9)$ is the mid-point of A $(4,10)$ and B $(2a,8)$, then the value of a is :

A. 2

B. 1

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

D. -1

Answer:



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Section B

1. A piggy bank contains hundred 50p coins, fifty Rs. 1 coins, twenty ? 2 coins and ten Rs. 5 coins. If it is equally likely that one of the coins will fall out when the bank is turned upside down, what is the probability that the coin (i) will be a

A. $\frac{8}{25}$

B. $\frac{7}{25}$

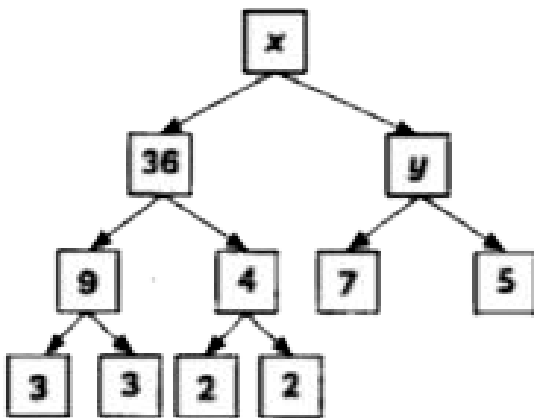
C. $\frac{3}{25}$

D. $\frac{1}{25}$

Answer:

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2. The value of x in the given factor tree is :



A. 360

B. 1620

C. 630

D. 1260

Answer:



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3. If $\tan \theta + \cot \theta = 5$, the value of $\tan^2 \theta + \cot^2 \theta$ is :

A. 25

B. 23

C. 27

D. 15

Answer:



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4. Find the radius of a circle whose centre is at the origin and a point $P(5, 0)$ lies on its circumference.

A. 34 units

B. 8 units

C. 5 units

D. 7 units

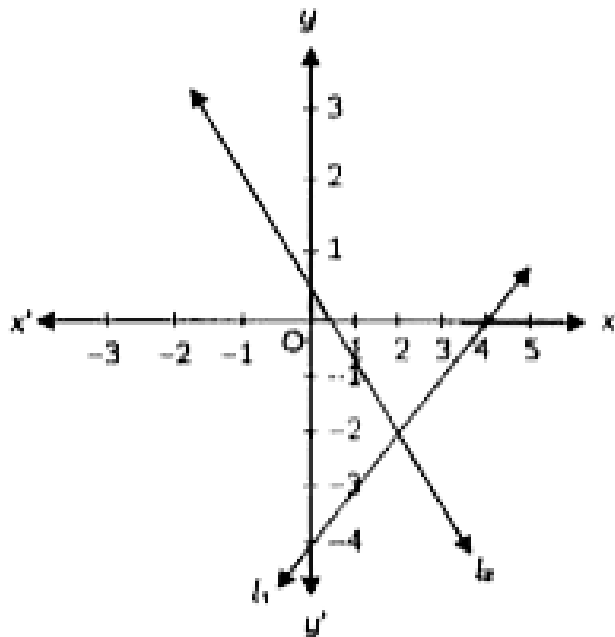
Answer:



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5. The solution of the pair of linear equations represented by lines l_1 and l_2 , in the given

graph, is:



A. $(4,0)$

B. $\left(0, \frac{1}{2}\right)$

C. $(2, -2)$

D. $(-4, 0)$

Answer:



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6. A single letter is selected at random from the word "PROBABILITY" . The probability that it is a vowel is

A. $\frac{4}{11}$

B. $\frac{5}{11}$

C. $\frac{6}{11}$

D. $\frac{7}{11}$

Answer:



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7. The HCF and LCM of two numbers are 9 and 360, respectively. If one number is 45, then the other number is:

A. 36

B. 18

C. 72

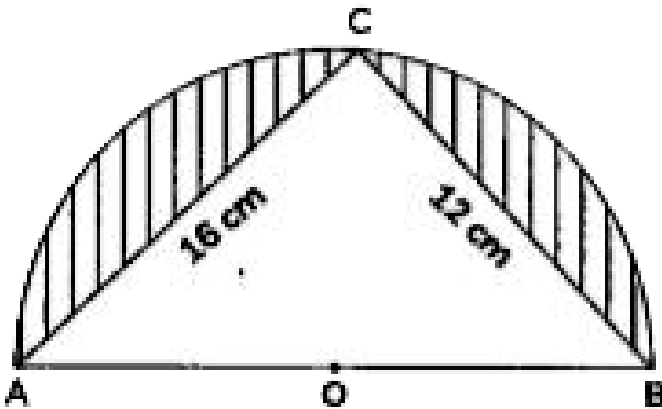
D. 35

Answer:



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8. In the given figure, if AOB is diameter, then the area of shaded region is: [Use $\pi = 3.14$]



A. 61cm^2

B. 532cm^2

C. 147cm^2

D. 227cm^2

Answer: A



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9. The larger of two supplementary angles exceeds thrice the smaller by 20 degrees. Find them.

A. 40° , 50°

B. 27.5° , 62.5°

C. 140° , 40°

D. 135° , 45° ,

Answer:



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10. In $\triangle DEC$, right angled at C, $EC = 24$ inches and $\angle EDC = 30^\circ$, then length of DE will be:

A. 12 inches

B. 24 inches

C. $16\sqrt{3}$ inches

D. $8\sqrt{3}$ inches

Answer:



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11. The solutions of pair of linear equations $x+y=3$ and $4x-3y=26$, will be:

A. $x = 5, y = -2$

B. $x = 5, y = 9$

C. $x = -2, y = 5$

D. $x = 9, y = 5$

Answer: A



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12. Find the coordinates of the point which divides the line segment joining the points A(4, -3) and B(9, 7) in the ratio: 3:2.

A. (7, 3)

B. (4, 2)

C. (5, 6)

D. (9, 4)

Answer:

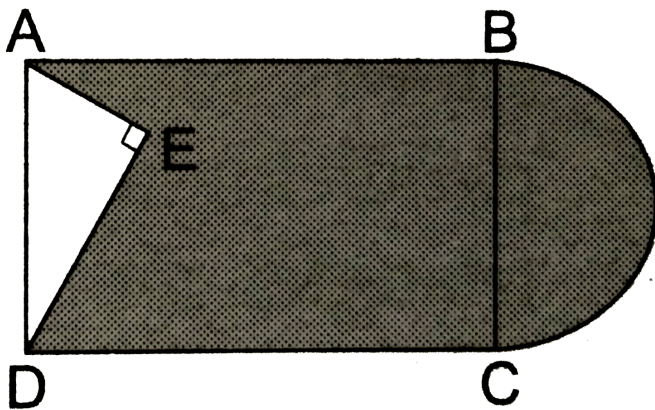


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13. In the given figure, from a rectangular region ABCD with $AB = 20cm$ a right triangle AED with $AE = 9cm$ and $DE = 12cm$, is cut

off. On the other end, taking BC as diameter, a semicircle is added on outside the region. The area of the shaded region.

[Use $\pi = 3.14$]



A. 84.55cm^2

B. 72.63cm^2

C. 84.55cm

D. 72.63cm

Answer:



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Section C

1. The highway overpass is represented graphically. Zeroes of a polynomial can be expressed graphically. Number of zeroes of polynomial is equal to number of points where

the graph of polynomial

(i) Intersects x-axis

(ii) Intersects y-axis

(iii) Intersects y-axis or x-axis

(iv) None of the above

A. intersect X-axis

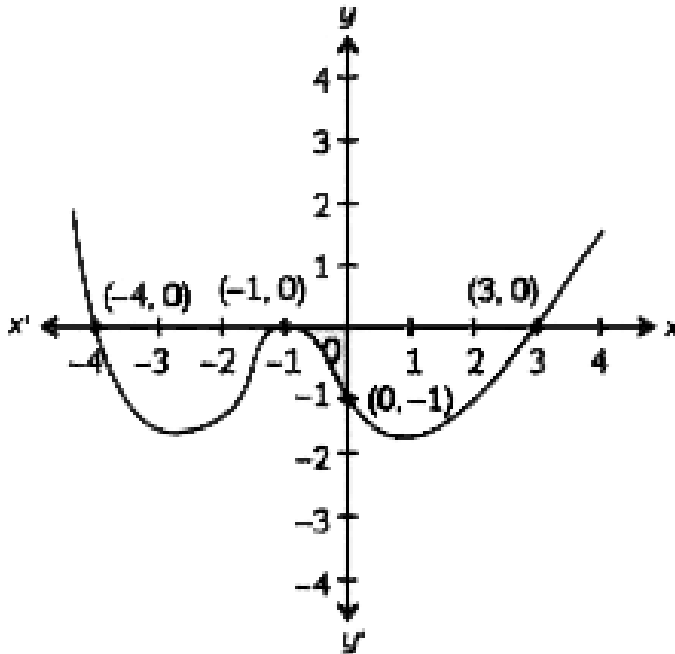
B. cuts y-axis

C. intersect y-axis

D. intersect origin

Answer:





2.

Evaluate from the graph, the zeroes of the polynomial function.

A. $-4, 1, 3$

B. $-4, -1, -3$

C. $4, 1, 3$

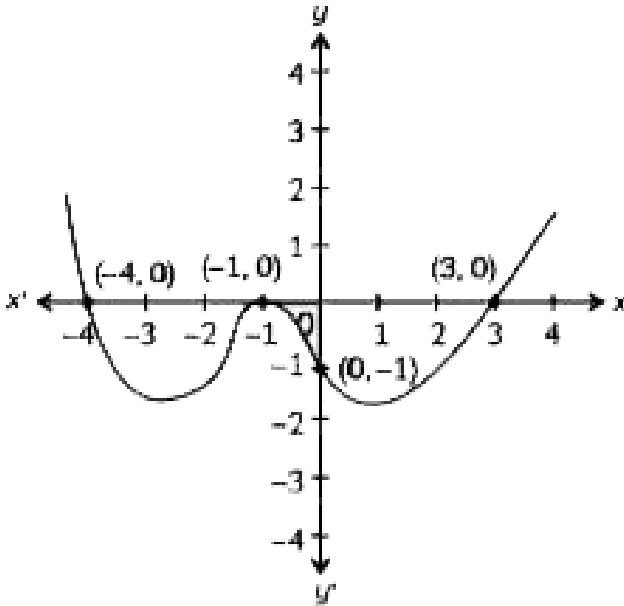
D. $-4, -1, 3$

Answer:



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3.

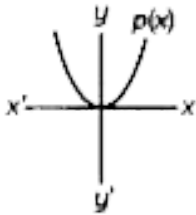


What is the maximum number of zeroes of the given graph?

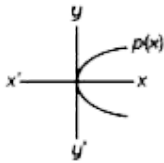


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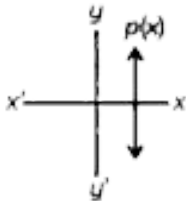
4. The graphs of $y = p(x)$ are given in figures below. Which among the following shows that $p(x)$ has no zero ?



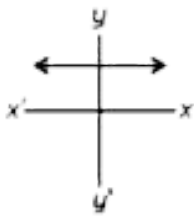
A.



B.



C.

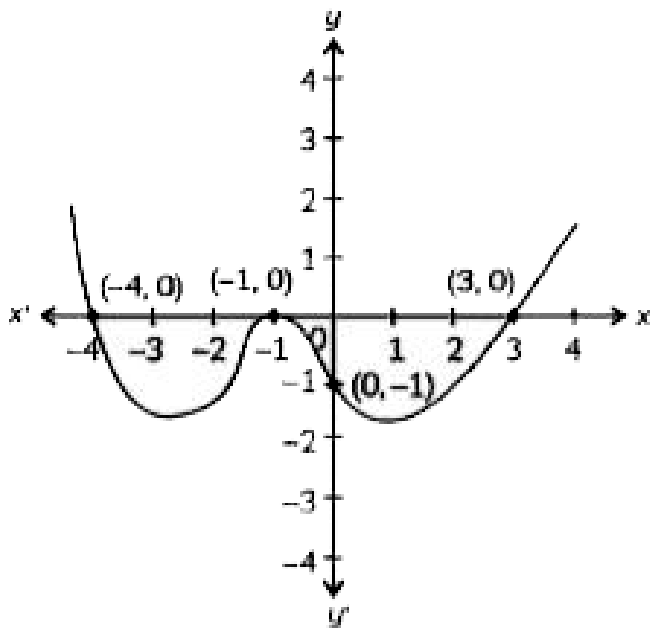


D.

Answer:



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5.

The graph of $y = f(x)$ is given. How many zeroes are there of $f(x)$?

A. 0

B. 1

C. 2

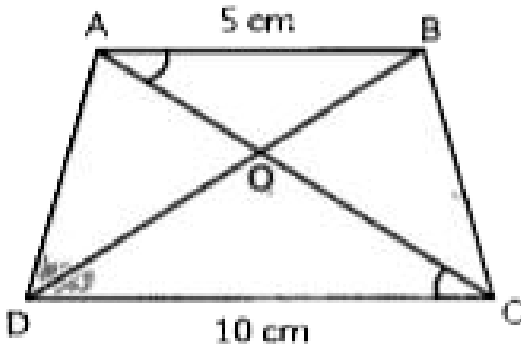
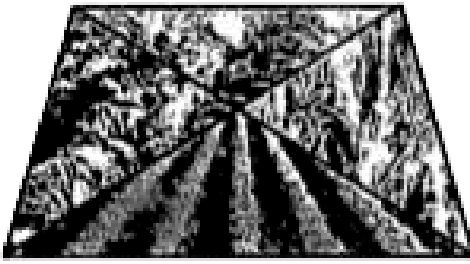
D. 3

Answer:



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6. Suresh's field is in the shape of a trapezium, whose map is in the scale $1 \text{ cm} = 20 \text{ m}$. He wants to draw four divisions in his field, so he could grow four different crops. The field is divided into four parts by joining the opposite vertices



Triangles AOB and COD are:

- A. similar by SAS criteria
- B. similar by RHS criteria
- C. similar by AA criteria
- D. not similar

Answer:



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7. If $y = \tan^{-1}(\sec x - \tan x)$, then
differentiation of y wrt x is equal to = ?

A. 1 : 4

B. 1 : 2

C. 2 : 1

D. 4 : 1

Answer:



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8. Which of the following would be true, if the ratio of the perimeters of two similar triangles $\triangle AOB$ and $\triangle COD$ would have been 1 : 4 ?

A. $CD = 2AB$

B. $CD = 4AB$

C. $AB = 2CD$

D. $AB = 4CD$

Answer:



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9. If in triangles PQR and XYZ

$$\frac{PQ}{XZ} = \frac{PR}{XY} = \frac{QR}{YZ}, \text{ then :}$$

A. $\Delta PRQ - \Delta XZY$

B. $\Delta QRP - \Delta YXZ$

C. $\Delta PQR - \Delta XYZ$

D. $\Delta PQR - \Delta XZY$

Answer:



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10. If $y = \tan^{-1}(\sec x - \tan x)$, then
differentiation of y wrt x is equal to= ?

A. Their altitudes have a ratio $a:b$.

B. Their medians have a ratio $\frac{a}{2} : b$

C. Their angle bisectors have a ratio $a^2 : b^2$

D. The ratio of their perimeters is $3a:b$.

Answer:



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