

Maths FULL Portion Test 19/03/2023

CBSE Science and Maths : Mathematics

Q.1 If one root of the equation $(k - 1)x^2 - 10x + 3 = 0$ is the reciprocal of the other, then the value of k is :

- 4
- 3
- 1
- 2

Q.2 LCM of 3, 5 and 15 is

- 45
- 30
- 15
- 60

Q.3 If one of the zeroes of the quadratic polynomial $(k - 1)x^2 + kx + 1$ is -3, then the value of k is

- $\frac{4}{3}$
- $-\frac{4}{3}$
- $\frac{2}{3}$
- $-\frac{2}{3}$

Q.4 A quadratic polynomial whose zeroes are -3 and 4, is

- $x^2 - x + 12$
- $x^2 + x + 12$
- $\frac{x^2}{2} - \frac{x}{2} - 6$
- $2x^2 + 2x - 24$

Q.5 If $\text{HCF}(16, y) = 8$ and $\text{LCM}(16, y) = 48$, then the value of y is

- 24
- 16
- 8
- 48

Q.6 Which of the following equations has the sum of its roots as 3?

- $2x^2 - 3x + 6 = 0$
- $-x^2 + 3x - 3 = 0$

$\sqrt{2}x^2 - \frac{3}{\sqrt{2}}x + 1 = 0$

$3x^2 - 3x + 3 = 0$

Q.7 The quadratic equation $2x^2 - \sqrt{5}x + 1 = 0$ has

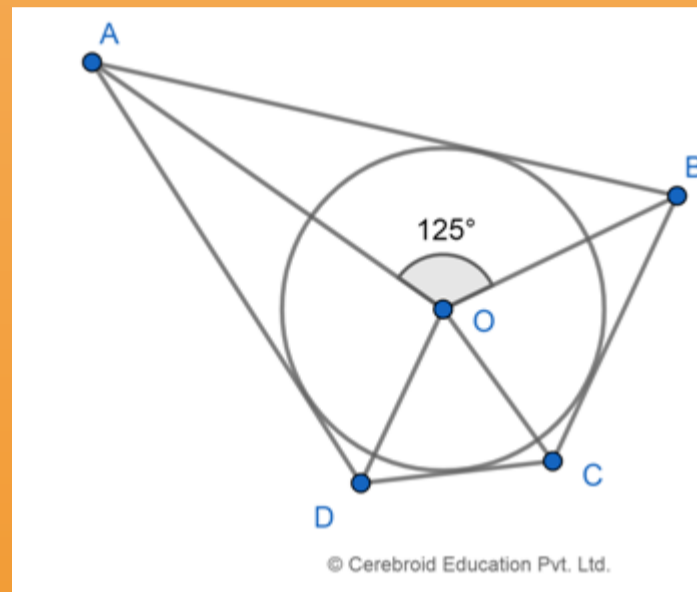
two distinct real roots

two equal real roots

no real roots

more than 2 real roots

Q.8 In the given figure, if $\angle AOB = 125^\circ$, then $\angle COD =$



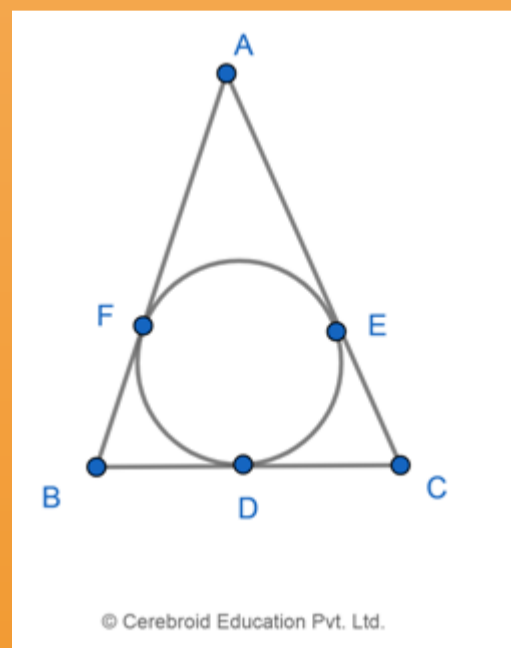
62.5°

45°

35°

55°

Q.9 A triangle ABC is drawn to circumscribe a circle as shown. If $AB = 13$ cm, $BC = 14$ cm, and $AE = 7$ cm, then $AC =$



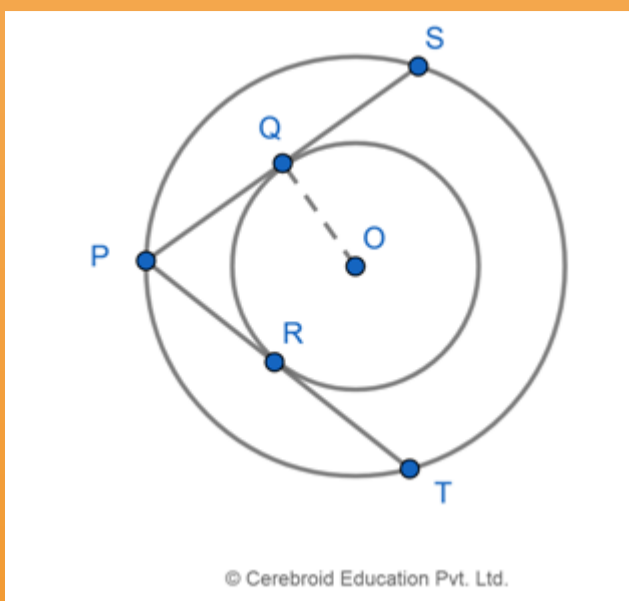
15 cm

12 cm

18 cm

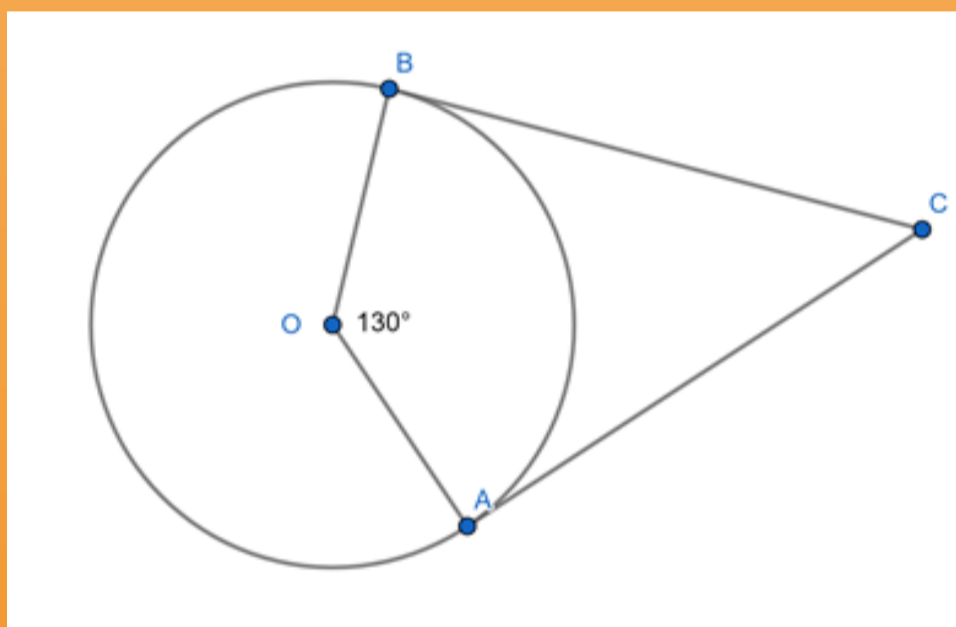
21 cm

- Q. 10 In the figure there are two concentric circles with centre O. PRT and PQS are tangents to the inner circle from a point P lying on the outer circle. If $PR = 5$ cm, then $PS =$



- 8 cm
 10 cm
 9 cm
 12 cm

- Q. 11 In the figure, tangents CB and CA are drawn from a point to a circle with centre O such that $\angle AOB = 130^\circ$. $\angle ACB =$



- 60°
 40°
 50°
 45°

- Q. 12 A wire bent in the form of an equilateral triangle, encloses an area of $121\sqrt{3}$ cm^2 . If the wire is bent in the form of a circle, the diameter of the circle will be:

[Take $\pi = 22/7$]

- 21 cm
 10.5 cm
 28 cm
 14 cm

- Q. 13 When a die is rolled, the probability of getting an odd number, or a number less than 4 is:

- 1/3
- 2/3
- 5/6
- 1

Q. 14 The sum of all 2 digit numbers, which yield a remainder of 1 when divided by 7 is:

- 735
- 741
- 763
- 787

Q. 15 The first term of an A.P. is 5, the last term is 45, and the sum is 400. The number of terms and common difference is, respectively:

- 16, $\frac{8}{3}$
- 16, 4
- 15, 4
- 14, $\frac{5}{2}$

Q. 16 The 'k'th term of the A.P. 3, 10, 17, ... is 84 more than its 13th term. The value of 'k' is:

- 22
- 23
- 24
- 25

Q. 17 The n^{th} term of an A.P. is $(7 - 3n)$. The common difference of the A.P. is:

- 3
- 3
- 7
- 7

Q. 18 The following pair of linear equations are to be solved by "elimination by equating coefficients".

$$(1) x + y = 5$$

$$(2) 2x - 3y = 4$$

Which of the following are the correct ways to proceed?

- Multiply equation (1) by 3 and add the two equations
- Multiply equation (1) by 3 and subtract (1) from (2)
- Multiply equation (2) by 5 and add the two equations
- Multiply equation (1) by 2 and add the two equations

Q. 19 In triangles ABC and DEF, $\angle B = \angle E$, $\angle F = \angle C$ and $AB = 3DE$. Then, the two triangles are:

- congruent but not similar
- similar but not congruent
- neither congruent nor similar
- congruent and similar

Q. 20 In a rectangle, Length = 8 cm, Breadth = 6 cm. Then its diagonal =

- 9 cm
- 14 cm
- 10 cm
- 12 cm

Q. 21 Given that $\sin \alpha = \frac{1}{2}$ and $\sec \beta = \frac{2}{\sqrt{3}}$, then the value of $(\alpha + \beta) =$

- 0°
- 30°
- 60°
- 90°

Q. 22 If $\sec \theta \cdot \sin \theta = 0$, then $\theta =$

- 0°
- 30°
- 60°
- 90°

Q. 23 $(1 + \tan \theta + \sec \theta)(1 + \cot \theta - \operatorname{cosec} \theta) =$

- 0
- 1
- 2
- 1

Q. 24 If $\sqrt{3} \sin \theta - \cos \theta = 0$ and $0^\circ \leq \theta \leq 90^\circ$, then $\theta =$

- 0°
- 30°
- 60°
- 90°

Q. 25 The top of two poles of height 16 m and 10 m are connected by a wire of length 'l' metre. If the wire makes an angle of 30° with the horizontal, then 'l' =

- 12 m
- $6\sqrt{2}$ m
- $6\sqrt{3}$ m
- $5\sqrt{3}$ m

Q. 26 A tower 30 m high casts a shadow $10\sqrt{3}$ m in length. The angle of elevation of the sun from the tip of the shadow is:

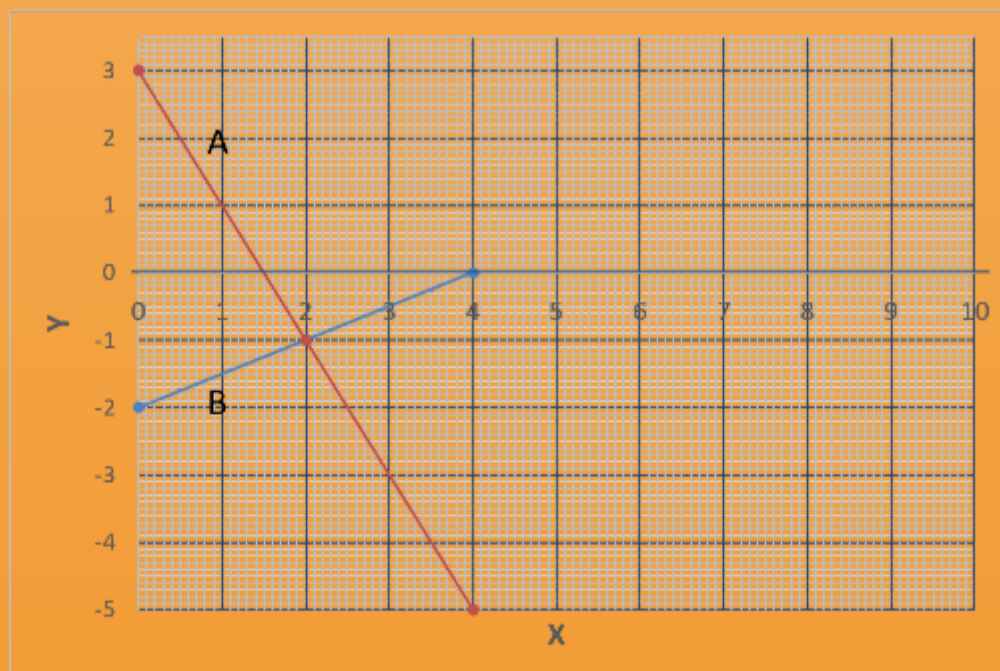
- 30°
- 45°
- 60°

Q. 27 In the following table, 'x' and 'w' are, respectively,

Class Interval	Frequency	Cumulative Frequency
0-10	5	5
10-20	7	w
20-30	x	18
30-40	5	z
40-50	y	30

- 12 and 6
- 12 and 30
- 5 and 10
- 6 and 12

Q. 28 A student prepared graphs as shown below to solve a pair of linear equations in two variables. Equation 'B' is:



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- $x - 2y - 4 = 0$
- $x - 2y - 2 = 0$
- $x + 2y = 2$
- $2x + y - 2 = 0$

Q. 29 AOBC is a rectangle whose three vertices are vertices A (0, 3), O (0, 0) and B (5, 0). The length of its diagonal is:

- 3
- 4
- 5
- $\sqrt{34}$

Q. 30 P is a point on the x-axis with an abscissa of -12 and Q is a point on the y-axis with an ordinate of -16. M is a point on PQ such that $PM : MQ = 4 : 1$. Then the measure of PM is:

- 16 units
- 20 units
- 12 units
- 8 units

Q. 31 A circle has its centre at the origin and a point P(5, 0) lies on it. Which of the following points lie inside the circle?

- (4, 3)
- $(-4, 9/2)$
- (3, 3)
- $(5/2, -4)$

Q. 32 The point on x-axis which is equidistant from (2, -5) and (-2, 9) is

- (-7, 0)
- (7, 0)
- (5, 0)
- (-5, 0)

Q. 33 The points (1, 1), (-1, -1) and $(-\sqrt{3}, \sqrt{3})$ are

- vertices of an isosceles triangle
- vertices of a scalene triangle
- vertices of an equilateral triangle
- collinear

Q. 34 The following table is constructed to find the mean of a set of grouped data. If assumed mean is taken as 50, the value of J will be:

Class Interval	x_i	f_i	d_i	$f_i d_i$
40-44	A	4	J	S
44-48	B	6	K	T
48-52	C	10	L	U
52-56	D	14	M	V
56-60	E	10	N	W
60-64	F	8	P	X

64-68	G	6	Q	Y
68-72	H	2	R	Z

- 8
 -32
 -8
 32

Q. 35

The following table is constructed to analyze a set of grouped data. The assumed mean has been taken as:

Class Interval	x_i	f_i	c.f.	d_i	$f_i d_i$
5-7	6	70	70	-6	-420
7-9	8	120	190	-4	-480
9-11	10	32	222	-2	-64
11-13	12	100	322	0	0
13-15	14	45	367	2	90
15-17	16	28	395	4	112
17-19	18	5	400	6	30
		Σf_i			$\Sigma f_i d_i$

- 8
 10
 12