

NAAHAR PUBLIC SCHOOL (CBSE) SENIOR SECONDARY
ACADEMIC YEAR(2022-2023)
FULL REVISION-1

GRADE: X
SUBJECT: MATHS
TEACHER'S INITIAL: Mr.RAMACHANDRAN

DATE:29.11.2022
MARKS:80
DUR: 3 HRS

1. What is the HCF of smallest prime number and the smallest composite number? 1

2. The pair of linear equations $2x + 3y = 5$ and $4x + 6y = 10$ is 1
 - (a) inconsistent
 - (b) consistent
 - (c) dependent consistent
 - (d) none of these

3. Match the Column: 1

(1) $2x + 3y = 40$ $6x + 5y = 10$	(A) Coincident lines
(2) $2x + 3y = 40$ $6x + 9y = 50$	(B) Intersecting lines
(3) $2x + 3y = 10$ $4x + 6y = 20$	(C) Parallel lines

(a) 1 – A, 2 – B, 3 – C	(b) 1 – B, 2 – A, 3 – C
(c) 1 – B, 2 – C, 3 – A	(d) 1 – C, 2 – A, 3 – B

4. The difference between a two digit number and the number obtained by interchanging the digits is 27. What is the difference between the two digits of the number? 1
 - (a) 9
 - (b) 6
 - (c) 12
 - (d) 3

5. If $x = 3$ is one root of the quadratic equation $x^2 - 2kx - 6 = 0$, then find the value of k . 1

6. For what value of k , the roots of the equation $x^2 + 4x + k = 0$ are real? 1

7. A ladder 15 m long just reaches the top of a vertical wall. If the ladder makes an angle of 60° with the wall, then the height of the wall is 1
 - (a) $15\sqrt{3}$ m
 - (b) $\frac{15\sqrt{3}}{2}$ m
 - (c) $\frac{15}{2}$ m
 - (d) 15 m

8. The HCF and LCM of two numbers are 9 and 360 respectively. If one number is 45, write the other number. 1

9. Without actually performing the long division, state whether the following rational numbers will have terminating decimal expansion or non-terminating repeating decimal expansion. 1
 - (i) $\frac{315}{16}$
 - (ii) $\frac{427}{625}$
 - (iii) $\frac{619}{325}$

10. Find the discriminant of the quadratic equation: $3\sqrt{3}x^2 + 10x + \sqrt{3} = 0$. 1

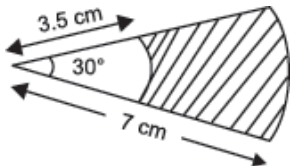
11. Find: (i) The 8th term of 117, 104, 91, 78, ... (ii) The 10th term of 10.0, 10.5, 11.0, 11.5, ... 1

12. If $a_n = \frac{n(n-3)}{n+4}$, then find 18th term of this sequence. 1

13. Find the next term of AP $\sqrt{2}, \sqrt{8}, \sqrt{18}$. 1

14. If the elevation of the sun at a given time is 30° , then find the length of the shadow cast by a tower of 150 feet height at that time. 1

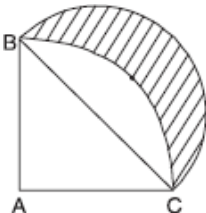
15. A kite is flying at a height of 30 m from the ground. The length of the string from kite to the ground is 60m. Assuming that there is no slack in the string, find the angle of elevation of the kite at the ground. 1
16. A chord of a circle of radius 14 cm subtends a right angle at the centre. What is the area of the minor sector? [$\pi = \frac{22}{7}$] 1
17. A bicycle wheel makes 5000 revolutions in moving 11 km. Find the diameter of the wheel. (use $\pi = \frac{22}{7}$) π 1
18. A pendulum swings through an angle of 30° and describes an arc 8.8 cm in length. Find the length of pendulum. (use $\pi = \frac{22}{7}$) 1
19. Find the value of x , if the mode of the following data is 25. 15, 20, 25, 18, 14, 15, 25, 15, 18, 16, 20, 25, 20, x , 18 1
20. If $di = xi - A$, $\sum_{i=1}^n f_i = 25$, $A = 250$, $\bar{x} = 250$, then find the value of $\sum_{i=1}^n f_i d_i$. 1
21. Prove that $3\sqrt{5}$ is irrational. 2
22. Divide 27 into two parts such that the sum of their reciprocals is $\frac{3}{20}$. [CBSE 2018 (C)] 2
23. Which term of the AP 21, 42, 63, 84, ... is 420? 2
24. In the given figure, sectors of two concentric circles of radii 7 cm and 3.5 cm are given. Find the area of the shaded region. [Use $\pi = \frac{22}{7}$] 2



25. Find the mode of the following frequency distribution 2

Class	Frequency
0 – 6	7
6 – 12	5
12 – 18	10
18 – 24	12
24 – 30	6

26. The sum of the digits of a two digit number is 15. The number obtained by interchanging the digits exceeds the given number by 9. Find the number. (Graphically) 3
27. Solve for x : $\frac{x-1}{x-2} + \frac{x-3}{x-4} = 3\frac{1}{3}$ ($x \neq 2, 4$) 3
28. How many terms of the AP 3, 5, 7, ... must be taken so that the sum is 120? 3
29. The angle of elevation of the top of a vertical tower from a point on the ground is 60° . From another point 10 m vertically above the first, its angle of elevation is 30° . Find the height of the tower. 3
30. In the fig., ABC is a quadrant of a circle of radius 14 cm and a semicircle is drawn with BC as diameter. Find the area of the shaded region. 3



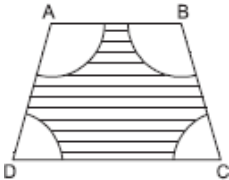
31. Find median of the following data: 3

Class interval	Frequency
130 – 139	4
140 – 149	9
150 – 159	18
160 – 169	28
170 – 179	24
180 – 189	10
190 – 199	7

32. If the sum of first 6 terms of an AP is 36 and that of the first 16 terms is 256, find the sum of first 10 terms. 4

33. The angle of elevation of an aeroplane from a point A on the ground is 60°. After a flight of 30 seconds, the angle of elevation changes to 30°. If the plane is flying at a constant height of $3600\sqrt{3}$ m, find the speed in km/hr of the plane. 4

34. In figure, ABCD is a trapezium with AB || DC, AB = 18 cm, DC = 32 cm and distance between AB and DC = 14 cm. If arcs of equal radii 7 cm with centres A, B, C and D have been drawn, then find the area of the shaded region. 4



35. Find mean, median and mode of the following data: 5

Classes	Frequency
0 – 20	6
20 – 40	8
40 – 60	10
60 – 80	12
80 – 100	6
100 – 120	5
120 – 140	3

36. A seminar is being conducted by an Educational Organisation, where the participants will be educators of different subjects. The number of participants in Hindi, English and Mathematics are 60, 84 and 108 respectively. [CBSE Question Bank] 5



(a) In each room the same number of participants are to be seated and all of them being in the same subject, hence maximum number participants that can accommodated in each room are

(i) 14 (ii) 12 (iii) 16 (iv) 18

(b) What is the minimum number of rooms required during the event?

(i) 11 (ii) 31 (iii) 41 (iv) 21

(c) The LCM of 60, 84 and 108 is

(i) 3780 (ii) 3680 (iii) 4780 (iv) 4680

(d) The product of HCF and LCM of 60, 84 and 108 is

(i) 55360 (ii) 35360 (iii) 45500 (iv) 45360

(e) 108 can be expressed as a product of its primes as

(i) $2^3 \times 3^2$

(ii) $2^3 \times 3^3$

(iii) $2^2 \times 3^2$

(iv) $2^2 \times 3^3$

37. For a pair of linear equations in two variables, $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$.

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(f) If $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$, then such a pair of linear equations has unique solution.

(g) If $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$, then such a pair of linear equations has no solutions.

If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$, then such a pair of linear equations has infinitely many solutions.

Answer the questions based on above

(a) What is condition for pair of linear equations $ax + 2y = 7$ and $3x + by = 16$ have no common solutions?

(b) For what value of q , the pair of linear equations $\frac{x}{\sqrt{2}} + \frac{y}{\sqrt{2}} = 1$ and $x \cos \theta + y \sin \theta = 1$ have infinitely many solutions.

(c) Determine the value of p and q , for which the pair of linear equations $2x + 3y = 7$ and $(p + q)x + (2p - q) + 21 = 0$ has infinitely many solution.

(d) Check whether the given pair of linear equations $x - y = 4$ and $x + y = 8$ have unique solution or not. If yes, then what are the respective values of x and y ?

(e) Verify, when $k \neq -2$, the pair of linear equations $3x + y = 1$ and $(2k - 1)x + (k - 1)y = 2k + 1$ have no solutions?

38. Your friend Veer wants to participate in a 200 m race. He can currently run that distance in 51 seconds and with each day of practice it takes him 2 seconds less. He wants to do in 31 seconds. [cbse Question Bank]

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(h) Which of the following terms are in AP for the given situation

(i) 51, 53, 55.... (ii) 51, 49, 47.... (iii) -51, -53, -55... (iv) 51, 55, 59...

(i) What is the minimum number of days he needs to practice till his goal is achieved (i) 10 (ii) 12 (iii) 11 (iv) 9

(j) Which of the following term is not in the AP of the above given situation

(i) 41 (ii) 30 (iii) 37 (iv) 39

(k) If n^{th} term of an AP is given by $a_n = 2n + 3$ then common difference of an AP is

(i) 2 (ii) 3 (iii) 5 (iv) 1

(l) The value of x , for which $2x$, $x + 10$, $3x + 2$ are three consecutive terms of an AP (i)

6 (ii) -6 (iii) 18 (iv) -18

