K. R. MANGALAM WORLD SCHOOL, GK-II

CLASS X/MATHEMATICS

REVISION WORKSHEET

General Instructions:
a) All questions are compulsory.
b) The question paper comprises of four sections A, B, C and D.
c) Questions in section A are one-mark questions. These are MCQs. Choose the correct option.
d) Questions in section B are CASE STUDY BASED questions of 4 marks each.
f) Questions in section C are two marks questions.
g) Questions in section D are three marks questions.
h) Questions in section E are five marks questions.

SECTION A

1	HCF of 26 and 91 is: (a) 15 (b) 13 (c) 19 (d) 11	1
2	The smallest composite even number is a) 8 b) 4 c) 2 d) 6	1
3	If HCF (16, y) = 8 and LCM (16, y) = 48, then the value of y is (a) 24 (b) 16 (c) 8 (d) 48	1
4	Which of the following is not irrational? (a) $(3 + \sqrt{7})$ (b) $(3 - \sqrt{7})$	1

(c) $(3 + \sqrt{7})(3 - \sqrt{7})$

(d) $3\sqrt{7}$

5 If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of k is 1

(a) 10

(b) -10

(c) 5

(d) -5

6 If the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$ are 2 and -3, then 1

(a) a = -7, b = -1

(b) a = 5, b = -1

(c) a = 2, b = -6

(d) a – 0, b = -6

7 If one root of the equation $3x^2 = 8x + (2k+1)$ is seven times the other, then the value of k is: 1

(i) 7/3

(ii) 5/3

(iii) -5/3

(iv) -7/3

8 If p and q are the zeroes of the polynomial x2 -6x+k and 3p +2q=20, then the value of k is 1

(i) -8

(ii) 16

(iii) -16

(iv) 8

9 In the given data, the difference between the upper limit of the median class and the lower limit of the modal class is C.I. 1

C. I.	Frequency
65-85	4
85-105	5
105-125	13
125-145	20
145-165	14
165-185	7
185-205	4

(i) 38

(ii) 20

(iii) 19

(iv) 0

10 One of the methods for determining mode is: 1

(i) Mode = 2 Median -3 Mean

(ii) Mode = 3 Median -3 Mean

(iii) Mode = 3 Median -2 Mean

(iv) 2Mode = 3 Median – Mean

SECTION B: CASE STUDY BASED QUESTION

11 Push-ups are a fast and effective exercise for building strength. These are helpful in almost all sports including athletics. While the push-up primarily targets the muscles of the chest, arms, and shoulders, support required from other muscles helps in toning up the whole body. Nitesh wants to participate in the push-up challenge. He can currently make 3000 push-ups in one hour. But he wants to achieve a target of 3900 push-ups in 1 hour for which he practices regularly. With each day of practice, he is able to make 5 more push-ups in one hour as compared to the previous day. If on first day of practice he makes 3000 push-ups and continues to practice regularly till his target is achieved. Keeping the above situation in mind answer the following questions: 4

Form an A.P representing the number of push-ups per day and hence find the minimum number of days he needs to practice before the day his goal is accomplished?

ii) Find the total number of push-ups performed by Nitesh up to the day his goal is achieved.

12 Dipesh bought 3 notebooks and 2 pens for Rs. 80. His friend Ramesh said that price of each notebook could be Rs. 25. Then three notebooks would cost Rs.75, the two pens would cost Rs. 5 and each pen could be for Rs. 2.50. Another friend Amar felt that Rs. 2.50 for one pen was too little. It should be at least Rs. 16. Then the price of each notebook would also be Rs.16. 4

Lokesh also bought the same types of notebooks and pens as Dipesh. He paid 110 for 4 notebooks and 3 pens.

Based on this information answer the following five questions:

(i) Let the cost of one notebook be x and that of pen be y. Write the set of equations to describe the given problem?

(ii) Whether the estimation of Ramesh and Amar is applicable for Lokesh?

(iii) What is the exact cost of the notebook?

OR

(iv) What is the exact cost of the pen?

SECTION C

13 The LCM of two numbers is 14 times their HCF. The sum of LCM and HCF is 600. If one number is 280, then find the other number. 2

14 If one zero of $2x^2 - 3x + k$ is reciprocal of the other, then find the value of k. 2

15 The king, queen and jack of diamonds are removed from a pack of 52 playing cards and the pack is well shuffled. A card is drawn from the remaining cards. Find the probability of getting a card of (i)diamond (ii) a jack 2

16 Find the value of $a_{25} - a_{15}$ for the AP: 6, 9, 12, 15, …….. 2

17 If $x = 3m-1$ and $y = 4$ is a solution of the equation $x + y = 6$, then find the value of m. 2

18 What is the value of p for which $x^2 + 5px + 16 = 0$ has equal and real roots? 2

19 Find the value of m so that the quadratic equation $mx(5x - 6) = 0$ has two equal roots. 2

20 Mrs. Garg recorded the marks obtained by her students in the following table. She calculated the modal marks of the students of the class as 45. While printing the data, a blank was left. Find the missing frequency in the table given below: 2

Marks Obtained	0 - 20	20 - 40	40 - 60	60 - 80	80 - 100
Number of Students	5	10	---	6	3

SECTION D

21 Find the largest number that will divide 398, 436 and 540 leaving remainder 7, 11 and 13 respectively. 3

22 If α and β are the zeroes of the polynomial $p(x) = 2x^2 – 7x+ 3$, find the value of $\alpha^2 + \beta^2$. 3

23 Find the zeroes of the quadratic polynomial $p(x) = x^2+7x + 10$ and verify the relation between the zeroes and the coefficient of the polynomials. 3

24 A die is thrown twice. Find the probability that: 3

(i)5 will come up at least once
(ii)5 will not come up either time
(iii) getting a prime doublet

25 If Ritu was younger by 5 years than she really is, then the square of her age would have been 11 more than five times her present age. What is her present age? 3

OR

Solve for x: $9x^2 - 6px + (p^2 - q^2) = 0$

26 For which values of p and q, will the following pair of linear equations have infinitely many solutions? 3

$4x + 5y = 2$

$(2p + 7q)\,x + (p + 8q)\,y = 2q - p + 1$

27 Find the values of k for which the quadratic equation $kx\,(x - 2) + 6 = 0$ has two equal roots. 3

28 The distribution given below shows the runs scored by batsmen in one-day cricket matches. Find the mean number of runs. 3

Runs scored	0 - 40	40 - 80	80 - 120	120 - 160	160 - 200
Number of batsmen	12	20	35	30	23

29 Prove that $\sqrt{3}$ is an irrational number. 3

SECTION E

30 A two-digit number is such that the product of its digits is 14. If 45 is added to the number, the digits interchange their places. Find the number. 5

31 Cards marked 1, 3, 5, …. 49 are placed in a box and mixed thoroughly. One card is drawn from the box. Find the probability that the number on the card is : 5

(i)divisible by 3 (ii) a composite number

(iii) not a perfect square (iv) multiple of 3 and 5

32 The taxi charges in a city comprised of a fixed charge for 1st km. together with the charge for distance covered. For a journey of 15 km the charge paid is Rs 115 and for a journey of 27 km the charged for paid is Rs199. What a person has to pay for a distance of 50 km. 5

33 Seven years ago, Varun's age was five times the square of Swati's age. Three years hence, Swati's age will be two fifth of Varun's age. Find their present ages. 5