

MENTAL MATHS Workbook

For the preparation of National & International Competitions



- Chapter-wise practice exercises
- Previous year paper

CREST Mental Maths Olympiad (CMMO)

Mental Maths Competitions Preparation Book

Grade 5



#CRESTInnovator

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CREST Mental Maths Olympiad (CMMO) Workbook for Grade 5

First Edition

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Disclaimer: The information in the Workbook is to give you the path to success but it does not guarantee 100% success as the strategy is completely dependent on its execution.

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Contents

1.	Knowing our Numbers	5
2.	Integers	13
3.	Playing with Numbers	21
4.	Fractions and Decimals	28
5.	Comparing Quantities	35
6.	Mensuration	43
7.	Understanding Elementary Shapes	53
8.	Data Handling	61
9.	Previous Year Paper	67
10	Answer Key	76

Preface

We are pleased to launch first edition of this workbook. We welcome feedback from students, teachers, educators and parents. For improvements in the next edition, please send your suggestions at info@crestolympiads.com. Our team will make an effort to work on those suggestions.

CREST Olympiads is one of the largest Olympiad Exams with students from more than 60 countries. The objective of these exams is to build a competitive spirit while evaluating students on conceptual understanding of the concepts.

We strive to provide a superior learning experience, and this workbook is designed to complement the school studies and prepare the students for various competitive exams including the CREST Olympiads. This workbook provides practice questions on the topics. These questions encourage the students to think analytically, to be creative and to come up with solutions of their own. There is a previous year's paper given at the end of this workbook for the students to attempt after completing the syllabus. This paper should be attempted in 1 hour to get an assessment of the student's preparation for the final exam.

Publishers



Knowing our Numbers

- 1. What is the sum of the smallest 3-digit number and the largest 2-digit number?
 - a. 110 b. 1099
 - c. 199 d. 999
- 2. If you double the number 245 and add 10, what do you get?

a.	400	b.	500
c.	490	d.	510

 If you subtract 15 from me, then divide by 5, the result is 17. What number am I?

a.	100	b.	95
c.	90	d.	85

4. How many tens are there in 230?

a.	2	b.	20
c.	23	d.	230

5. If a book costs \$45 and you have a \$50 bill, how much change should you receive?

a.	\$2	b.	\$3
c.	\$4	d.	\$5

6. Solve the following: 20 + 300 × (50 ÷ 25) - 50

a.	650	b.	180
c.	570	d.	152

7. What is the total cost if you purchase three items, one priced at \$150 and two priced at \$245 each?

a.	\$640	b.	\$756
c.	\$451	d.	\$655

8. Which of these numbers is not a factor of 144?

a.	12	b.	24
c.	44	d.	18

9. Which number, when multiplied by 3, gives 1,002,003?

a.	335,000	b.	324,456
c.	333,667	d.	334,001

10. What is the result of 50,000 × 4 + 20,000?

a.	220,000	b.	200,000
c.	210,000	d.	230,000

- 11. What is the number name for 234,567?
 - a. Two hundred thirty-four thousand five hundred sixtyseven
 - Two hundred forty-three thousand five hundred sixtyseven
 - c. Two hundred thirty-four thousand five hundred seventysix
 - d. Two hundred thirty-four thousand six hundred fifty-seven
- **12.** If the product of two numbers is 24 and one of the numbers is 8, what is the other number?

a.	4	b.	3
c.	2	d.	6

13. A classroom needs 24 books for each student. If there are 26 students, how many books are needed in total?

a.	624	b.	625
c.	626	d.	245

14. Write the number of the given number name:

Fifty-five million fifty thousand fifty.

a.	55,550,050	b.	555,050,050
c.	55,050,550	d.	55,050,050

15. Find the numeral for the following: 5 × 100,000,000 + 7 × 100,000 + 8 × 1000 + 9 × 10

a.	500708009	b.	500070890
c.	507008090	d.	500708090

16. How many three-digit numbers are there in all?

a.	999	b.	998
c.	900	d.	990

17. What will be the greatest 6-digit number having five different digits?

a.	987456	b.	987654
c.	987650	d.	967890

18. Fill in the blank:

The number 100 less than the smallest 4-digit number is _____.

a.	900	b.	450
c.	899	d.	100

19. Fill in the blank: 36 thousand + 12 hundreds = _____.

a.	35,500	b.	45,650
c.	37,200	d.	38,500

- 20. Which one of the following is greater?
 - a. (4000 + 9)
 - b. Four thousand ninety

- c. Forty thousand nine
- d. (1564 + 2436 + 5)
- **21.** I am a 2-digit number. I have 7 in the ones place. I am less than 80 but more than 70.

a.	77	b.	72
c.	75	d.	76

22. Fill in the blank:18 tens more than _____ is 280.

a.	180	b.	150
c.	262	d.	100

23. How much is 48 - 45 + 29 - 26 + 18 - 15 + 24 - 21?

a.	15	b.	18
c.	12	d.	20

24. Find the numbers that should come in place of a, b and c so that the sum of numbers from every side is the same.

22	27	20
21	а	25
b	19	С

- a. a = 23, b = 26 and c = 24
- b. a = 30, b = 36 and c = 18
- c. a = 10, b = 12 and c = 21
- d. a = 11, b = 10 and c = 14
- 25. How many chocolates are there in 21 boxes if there are 21 chocolates in each box?

a.	440	b.	441
c.	438	d.	450

26. The annual school fee is \$3600. What is the monthly fee?

a.	\$200	b.	\$500
C.	\$300	d.	\$450

27. What is the predecessor of 2,45,678?

a.	2,34,677	b.	2346579
c.	2,34,567	d.	2,45,644

28. In a division problem, the dividend is 37037, the quotient is 89 and the remainder is 13. What is the divisor?

a.	416	b.	450
c.	256	d.	265

29. How many days are there in 10008 hours?

a.	417 days	b.	152 days
c.	256 days	d.	124 days

30. The sum of the ages of a father and his daughter is 80 years. The father's age is four times the age of the daughter. What is the father's age?

a.	64 years	b.	46 years
c.	58 years	d.	68 years

31. Estimate the product of 79 and 5 using rounding to the nearest ten.

a.	400	b.	395
c.	390	d.	405

32. Find the difference by estimating to the nearest ten thousand: 567,432 - 123,456

a.	450,000	b.	254,000
c.	120,000	d.	570,000

33. Estimate the total cost of three books priced at \$14.75 each.

a.	\$40	b.	\$45
c.	\$50	d.	\$44

34. An orchard has approximately 1,489 apple trees and 1,322 orange trees. Estimate the total number of trees.

a.	2800	b.	3000
С	2500	Ь	2700

35. A school buys computers for \$748 each. Estimate the total cost for 15 computers.

a.	\$10,000	b.	\$11,000
c.	\$12,000	d.	\$13,000

36. Anna lives in a rented flat in New Delhi. She pays \$48,517 as rent per year. How much money does she pay as rent if rounded off to the nearest ten thousands?

a.	\$20,000	b.	\$15,000
c.	\$50,000	d.	\$18,000

37. Sumit weighs 107 kg and Sanjay weighs 82 kg. What is the difference of their weights if the weight of each is rounded off to the nearest hundred?

a.	0 kg	b.	20 kg
c.	1 kg	d.	15 kg

38. A large music festival reported attendance numbers for two days. On Saturday, 78,459 people attended, and on Sunday, 92,723 people attended. Estimate the total attendance for the weekend by nearest thousand.

a.	126,000	b.	140,000
c.	125,000	d.	171,000

39. Neera drinks 190 ml of milk every day. How much milk does she drink in a week? Round off your answer to the nearest hundred.

a.	1500 ml	b.	1330 ml
c.	1300 ml	d.	1200 ml

40. Estimate the area of a rectangle with a length of 54 m and a width of 23 m.

a.	1200 sq m	b.	1500 sq m
c.	1000 sq m	d.	2000 sq m

41. Estimate how many pencils 22 children would get if there were 239 pencils in all.

a.	12	b.	15
c.	14	d.	16

42. Estimate the cost of two items that cost \$1.83 each.

a.	\$8	b.	\$12
c.	\$4	d.	\$6

43. Estimate the product:Eight hundred and one is multiplied by 84.

a.	64000	b.	66000
c.	67500	d.	62000

44. Estimate the total of the following purchases:

A 12-pound turkey that costs \$9.60, a can of gravy for \$1.59 and a 10-pound bag of potatoes for \$5.99.

a.	\$17	b.	\$15
c.	\$18	d.	\$16

45. Over the past five years, there have been 153 inches, 129 inches, 167 inches, 93 inches, and 119 inches of snow. What are the estimated total inches of snow?

a.	660	b.	125
c.	650	d.	250

46. Round the number 894,754,390 to the nearest million.

a.	894,800,000	b.	890,000,000
c.	895,000,000	d.	894,700,000

47. Julian is selling tickets for his school's theatre production of South Pacific. So far he has sold 439 tickets for Thursday night's performance, 529 for Friday's and 587 for Saturday's. The costs of

the tickets are \$9.80 for adults and \$4.90 for students. Round the figures to the first digit to estimate the number of tickets Julian has sold so far.

- a. 1500 tickets b. 1600 tickets
- c. 1200 tickets d. 1800 tickets
- **48.** Brent bought a car 5 years ago for \$21 798. The car's value has decreased to one-third of its initial value. What is the approximate value of the car today?

a.	\$21,456	b.	\$45,615
c.	\$14,562	d.	\$7,266

49. In 1999, the population of Capital City was 7,255,831 and the population of Spring City was 3,942,652. Round each population to the nearest hundred thousand to estimate the difference in the populations of the two cities.

a.	2,250,000	b.	7,300,000
c.	3,400,000	d.	3,900,000

50. A number rounded to the nearest hundred is 9200. Determine the largest possible number.

a.	9250	b.	9249
c.	9151	d.	9248

51. Estimate the perimeter of a triangle whose sides are 5699 ft, 7309 ft and 3544 ft by first rounding each length to the nearest hundred.

a.	16,500 ft	b.	17,500 ft
c.	12,500 ft	d.	16,520 ft

52. In a cinema there are 28 rows and in each row there are 22 seats. Each ticket costs \$8.10 Work out an estimate for the total income from the ticket sales.

a.	\$4928	b.	\$4236
C.	\$4862	d.	\$4486

53. The Pan family took a trip and traveled 87, 165, 449, 439, 598, and 560 miles on 6 consecutive days. Round each distance to the nearest hundred to estimate the distance they traveled.

a.	2100 miles	b.	1800 miles
c.	2000 miles	d.	2300 miles

- 54. At Stefan Secondary College there are 127 students in Year 7, 152 students in Year 8 and 319 students in Years 9 and 10. Estimate the total number of students in Years 7–10.
 - a. 600 students b. 500 students
 - c. 150 students d. 350 students
- **55.** Which number is greater, half of 400 or a third of 600?
 - a. Half of 400
 - b. A third of 600
 - c. Both are equal
 - d. Cannot be determined
- **56.** If you add 500 to 2,482, is the sum larger or smaller than multiplying 350 by 7?
 - a. Larger
 - b. Smaller
 - c. Equal
 - d. Cannot be determined
- **57.** A jar contains 1,256 marbles. If you remove 256 marbles, is the remaining number greater than or less than half of the original total?
 - a. Greater than half
 - b. Less than half
 - c. Exactly half
 - d. Cannot be determined
- **58.** Solve the following: 8165 x 169 - 8165 x 69

a.	815600	b.	816500
c.	812500	d.	856200

59. A school principal places orders for 85 chairs and 25 tables with a dealer. Each chair cost \$180 and each table cost \$140. If the principal has given \$2500 to the dealer as an advance money, then what amount to be given to the dealer now?

a.	\$15200	b.	\$16300
c.	\$18000	d.	\$12500

60. What is the product of the successor and predecessor of 999?

a.	999,000	b.	997,000

- c. 998,000 d. 999,800
- **61.** Which pair has the same digits at the hundreds place?
 - a. 4232, 4331 b. 2334, 2340
 - c. 6524, 7823 d. 5432, 6922
- **62.** When one is added to the greatest four-digit number, what is the result?
 - a. Smallest 5 -digit number
 - b. Greatest 5-digit number
 - c. Smallest 3-digit number
 - d. Greatest 3-digit number
- 63. What must be subtracted from 11010101 to get 2635967?
 - a. 7845821 b. 8374134
 - c. 8456823 d. 4586823
- 64. A ten-digit mobile number starts with 9, 9, 8, and 7, and ends with 3, 5, and 5 in the same order. The three remaining digits are distinct and should be selected to create the greatest possible number. What are these three digits?

a.	998564355	b.	998764552
c.	998364355	d.	998764355

65. Find the sum of the greatest and the least six-digit numbers formed by the digits 2, 0, 4, 7, 6 and 5 using each digit only once.

a.	204586	b.	765428
c.	969987	d.	457680

66. The sum of the place values of 4 in the number 548402 is:

a.	4000	b.	4040
c.	4400	d.	40400

67. A factory has a container filled with 35874 L of cold drink. In how many bottles of 200 mL capacity each can it be filled?

a.	185600	b.	179370
c.	185200	d.	178000

68. In a five-digit number, digit at ten's place is 4, digit at unit's place is one fourth of ten's place digit, digit at hundred's place is 0, digit at thousand's place is 5 times of the digit at unit's place and ten thousand's place digit is double the digit at ten's place. Write the number.

a.	85041	b.	14058
c.	58624	d.	85021

- **69.** Find the product of the predecessor and successor of an even natural number.
 - a. Divisible by 2 b. Divisible by 3
 - c. Divisible by 4 d. An odd number
- **70.** How many millions are there in one billion?
 - a. Ten thousand
 - b. Hundred thousand
 - c. One thousand
 - d. Thousand hundred

71. Find the smallest 4-digit number using 4 different digits where digit 5 is at the hundreds place.

a.	1502	b.	1250
c.	1025	d.	1052

72. Find the sum of 548 and the number obtained by reversing its digits.

a.	845	b.	1256
c.	1563	d.	1393

73. How many whole numbers are there between 81 and 101?

a.	21	b.	19
c.	22	d.	20

74. What is the difference between the smallest and the greatest number using all the digits 0, 1, 3 and 5?

a.	4025	b.	4215
c.	4055	d.	4275

75. What is the product of the place value and the face value of 8 in 68324?

a.	65000	b.	18000
C.	64000	d.	24000

76. What is the difference of the successor and the predecessor of 1000?

a.	0	b.	1
c.	2	d.	4

77. What do you get by multiplying the smallest whole number by any natural number?

a.	0	b.	1526
c.	1	d.	1235

78. Find the value of A, B, C and D with suitable digit:

3941	
- A B 7 8	
1 8 C D	

- a. A = 2, B = 1, C = 6, D = 3
- b. A = 1, B = 6, C = 5, D = 3
- c. A = 1, B = 2, C = 5, D = 8
- d. A = 2, B = 5, C = 3, D = 8
- **79.** Which is the smallest 5-digit number ending in 6?

a.	10006	b.	10056
c.	16666	d.	12066

80. What is the greatest number of five digits which begins with 2 and ends with 5?

a.	20005	b.	19995
c.	29995	d.	29985

81. How many times 7 occurs in units place if we write natural numbers between 6 and 79?

a.	7 times	b.	8 times
c.	5 times	d.	10 times

82. How many different three-digit numbers can be formed using the digits 0, 2 and 3, if each digit can only be used once in each number?

a.	2	b.	3
c.	4	d.	5

83. What is the sum of the smallest twodigit natural number and the largest three-digit natural number?

a.	9010	b.	1090
c.	1009	d.	1019

84. What is the product of the smallest odd number and the largest two-digit even number?

a.	97	b.	98
c.	99	d.	93

- **85.** Swati is 12 years old. Her teacher is 24 years older than her. How old is her teacher?
 - a. 12 years b. 18 years
 - c. 24 years d. 36 years
- 86. A school has 12 classrooms and each classroom has 28 students. If 5 students are absent today, how many students are present in school?
 - a. 336 students b. 329 students
 - c. 350 students d. 315 students

87. A recipe calls for 3 eggs for every 2 cups of flour. If you use 6 cups of flour, how many eggs will you need?

a.	9 eggs	b.	2 eggs
c.	5 eggs	d.	8 eggs

88. Solve the following:

(9 - 8)	+ (7 -	6) + (5	- 4) +	(3 - 2) + 1
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- a. 5 b. 6 c. 7 d. 8
- **89.** Which least number should be subtracted from 1000 so that 30 divides the difference exactly?

a.	15	b.	20
C.	25	d.	40

90. How many two-digit numbers can be formed using the digits 0,1, 2, 3, 4, 5, 6, 7, 8, 9 if repetition of digits is allowed?

a.	100	b.	101
c.	111	d.	90

91. What should be added to (40 x 30) 'so' that the sum is (12500 + 10)?

a.	11310	b.	12510
c.	12000	d.	14250

92. I am a number between 130 and 140. I occur in the table of 17. What number am I?

a.	153	b.	182
c.	136	d.	128

93. Which least number should be subtracted from 207 to make it exactly divisible by 25?

a.	7	b.	10
С	25	b	15

- **94.** If you multiply a number by 6 and add 7, the result is 49. What is the number?
 - a. 7 b. 8 c. 6 d. 5
- **95.** Double 72 and multiply this by 5. What is your final result?

a.	360	b.	1000
c.	720	d.	850

96. The sum of three numbers is 88. If the first number is 29 and the second

number is 13, what is the third number?

a.	50	b.	44
c.	48	d.	46

97. The difference between 35 and 10 is added to 66. What is the answer?

a.	61	b.	58
c.	75	d.	91

98. Calculate the result of (15 × 4) + (10 × 10 ÷ 5) - 6

a.	85	b.	81
C.	93	d.	74

99. If the product of a number and 6 is increased by 15, the result is 75. What is the number?

a.	10	b.	12
C.	15	d.	20

100. To fill an order, the factory dyed 336 yards of silk in yellow and 37 yards in pink. How many yards of silk did it dye for that order?

a.	371	b.	336
c.	350	d.	380

