



# MATHS

## BOOKS - RD SHARMA MATHS (HINGLISH)

### PLAYING WITH NUMBERS

Others

1. Without performing actual addition and division write the quotient when the sum of 79

and 97 is divided by 16

(ii) 11.



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2. Without performing actual computations.

Find the quotient when  $92-29$  is divided by

9

(ii) 7.



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3. Without performing actual addition, find the

quotient when  $237 + 372 + 723$  is divided by

111 (ii) 12 (iii) 37



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4. Write the quotients when the difference of 985 and the number obtained by interchanging its ones and hundreds digits is divided by 99 (ii) 4 (iii) 33



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5. Without performing actual addition and division write the quotient when the sum of 69 and 96 is divided by

1) 11

(ii) 15



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6. Without performing actual computations, find the quotient when  $94 - 49$  is divided by

9

(ii) 5





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7. If sum of the number 985 and two other numbers obtained by arranging the digits of 985 in cyclic order is divided by 111, 22 and 37 respectively. Find the quotient in each case.



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8. Find the quotient when the difference of 985 and 958 is divided by 9.



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**9.** Write the following numbers in the form

$$10b + a.$$

(i) 231

(ii) 542

(iii) 908



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**10.** If the division of a natural number  $n$  by 5 leaves a remainder of 3, what might be the

ones digit of  $n$ ?



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**11.** Let  $n$  be a natural number. If the division  $n \div 2$  leaves a remainder of 1, what might be the units digit of  $n$ ?



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**12.** Let  $n$  be a natural number. If the division  $n \div 2$  leaves no remainder, what might be the

units digit of  $n$  ?



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**13.** Let  $n$  be a natural number such that the division  $n \div 5$  leaves a remainder of 4, and the division  $n \div 2$  leaves a remainder of 1. What must be the units digit of  $n$  ?



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**14.** If  $24a$  is divisible by 9, find the value of  $a$





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15. If  $21y5$  is a multiple of 9, where  $y$  is a digit what is the value of  $y$  ?



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16. If  $2a25$  is a multiple of 9, where  $a$  is digit, what is the values of  $a$  ?



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17. If  $24x$  is a multiple of 3, where  $x$  is a digit, what is the value of  $x$  ?



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18. If  $24y5$  is a multiple of 3, where  $y$  is a digit, what might be the value of  $y$  ?



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**19.** If  $31z5$  is a multiple of 3, where  $z$  is a digit, what might be the values of  $z$ ?



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**20.** Without actual division find the remainder when 379843 is divided by 3.



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21. If  $24x$  is a multiple of 6, where  $x$  is a digit, what is the value of  $x$  ?



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22. If  $21y8$  is a multiple of 6, where  $y$  is a digit, what might be the value of  $y$  ?



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**23.** If  $13z4$  is a multiple of 6, where  $z$  is a digit what might be the value of  $z$ ?



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**24.** If  $24x$  is a multiple of 11, where  $x$  is a digit, what is the value of  $x$ ?



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25. If  $2y5$  is divisible by 11, where  $y$  is a digit, what is the value of  $y$  ?



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26. If  $31z$  is a multiple of 11, where  $z$  is a digit, what is the value of  $z$  ?



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27. Given that the number  $148101a095$  is divisible by 11, where  $a$  is some digit, what are the possible values of  $a$  ?



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28. Given that the number  $59142a$  is divisible by 4, where  $a$  is a digit, what are the possible values of  $a$  ?



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29. Given that the number  $7713a8$  is divisible by 4, where  $a$  is a digit what are the possible values of  $a$ ?



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30. Given that the number  $1735538a05$  is divisible by 9, where  $a$  is a digit what are the possible values of  $a$ ?



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**31.** Given that the number  $60ab57377$  is divisible by 99, where  $a$  and  $b$  are digits, what are the values of  $a$  and  $b$  ?



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**32.** Without performing actual division, find the remainders left when 192837465 is divided by (i) 9                      (ii) 11



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**33.** Without performing actual division, find the remainder when 28735429 is divided by 11.



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**34.** Given that the number  $35a64$  is divisible by 3, where  $a$  is a digit, what are the possible values of  $a$ ?



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**35.** If  $x$  is a digit such that the number  $18x71$  is divisible by 3. find possible values of  $x$  .



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**36.** If  $x$  is a digit of the number  $66784x$  such that it is divisible by 9. find possible values of  $x$  .



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**37.** Given that the number  $67y19$  is divisible by 9, where  $y$  is a digit, what are the possible values of  $y$  ?



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**38.** If  $3x2$  is a multiple of 11, where  $x$  is a digit, what is the value of  $x$  ?



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**39.** If  $98215x2$  is a number with  $x$  as its tens digit such that it is divisible by 4. Find all possible values of  $x$  .



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**40.** If  $x$  denotes the digit at hundreds place of the number  $67x19$  such that the number is divisible by 11. Find all possible values of  $x$  .



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**41.** Find the remainder when 981547 is divided by 5. Do this without doing actual division.



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**42.** Find the remainder when 51439786 is divided by 3. Do this without performing actual division.



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**43.** Find the remainder, without performing actual division, when 798 is divided, by 11.



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**44.** Without performing actual division, find the remainder when 928174653 is divided by 11.



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**45.** Given an example of a number which is divisible by 2 but not by 4, (ii) 3 but not by 6. 4 but not by 8, (iv) both 4 and 8 but not by 32.



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**46.** Which of the following statements are true? (a) If a number is divisible by 3, it must be divisible by 9.

(b) If a number is divisible by 9, it must be



divisible by 3.

(c) If a number is divisible by 4, it must be divisible by 8.

(d) If a number is divisible by 8, it must be divisible by 4.

(e) A number is divisible by 18, if it is divisible by both 3 and 6.

(f) If a number is divisible by both 9 and 10, it must be divisible by 90.



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47. Solve the following cryptarithms:  $37 + AB$   
 $/9A$



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48. Solve the cryptarithm :

$$AB + BA = DAD$$



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49. Solve the cryptarithm:  $ON + ON = GO$



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50. Solve the cryptarithm:

$$ON + ON + ON = GO$$



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51. Solve the cryptarithm :

$$ON + ON + ON + ON = GO$$



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52. Solve the following cryptarithms: (i)

$$ABx6 \setminus BBB$$



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53. Show that the following cryptarithms does not have any solution:  $ABx3 / CAB$



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54. Solve the cryptarithm:  $BAx \ B35 \ 7A$





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55. Solve the cryptarithm:  $AB \times AC = ACB$



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56. Solve each of the following Cryptarithms:

(iii)  $A1 + 1BB0$



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57. Solve the cryptarithm:  $4 \times ABC = AB$

does not have any solution.



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