



MATHS

BOOKS - KALYANI PUBLICATION

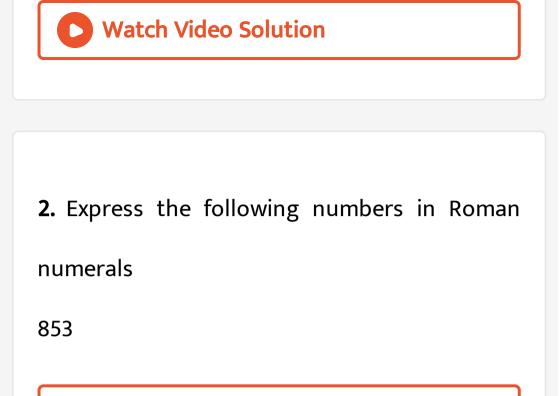
SYSTEM OF NUMERATION



1. Express the following numbers in Roman

numerals

329



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3. Express the following numbers in Roman

numerals

3624





4. Express the following numbers in Roman

numerals

7002

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5. Express the following numbers in Indo

Arabian System.

MXL

6. Express the following numbers in Indo Arabian System.

 $\overline{L}DXLVII$

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7. Express the following numbers in Indo

Arabian System.

CXCV.

8. Convert the number 970 of decimal system in to a system, where the numeration is based on five. In other word convert the number 970 of decimal system into the quinary system of numeration.

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9. Convert the following number into decimal

system

 $(2313)_{four}.$



10. Convert the following number into decimal

system

 $(2134)_{five}$.



11. $(245)_x$ is a number in a numeral system whose radix is x. If its decimal conversion is 101 then find x.

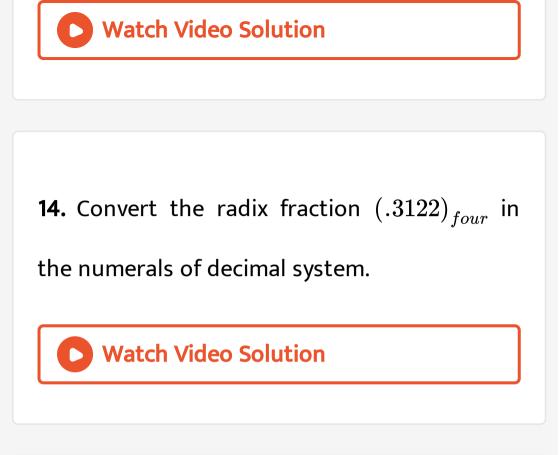




12. $(21)_x$ and $(25)_{x+2}$ are two numbers in two numeral system whose bases are x and x + 2. If their decimal conversion are y and 2y - 1respectively, find x and y.

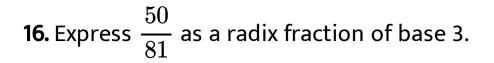


13. Convert the number 15251 of decimal system into the numerals of Duodenary system (base 12).



15. Express the decimal fraction .312 as radix

fraction in the numerals of radix 5.





17. Convert the number 5324.625 into the

system of numbers of radix 4.



18. Express 121 in binary system of numerals.

19. Converts $(101001)_{two}$ into decimal system.

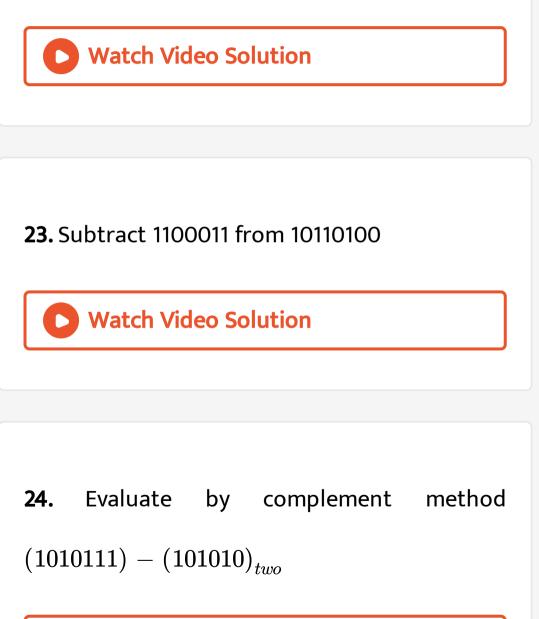


20. Find the sum 1010111 + 10100

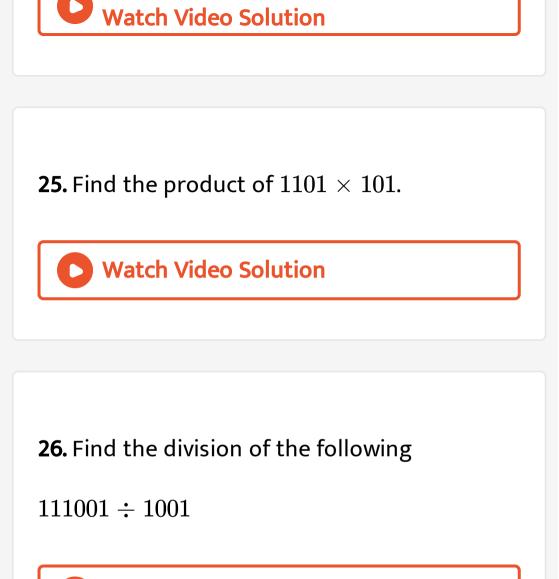
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21. Find the sum 101011 + 110011

22. Find the sum 10110 + 1010 + 111011







27. Find the division of the following

 $10101011 \div 1101$

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28. Express the following decimal system number in numeral of binary system.

5.

29. Express the following decimal systemnumber in numeral of binary system.9.



30. Express the following decimal system number in numeral of binary system.

12



31. Express the following decimal system

number in numeral of binary system.

18



32. Express the following decimal system number in numeral of binary system.

26

33. Express the following decimal system number in numeral of binary system. 29 Watch Video Solution 34. Express the following decimal system number in numeral of binary system. 32

35. Express the following decimal system number in numeral of binary system.

Watch Video Solution

36. Express the following decimal system number in numeral of binary system.

50

44

37. Express the following decimal systemnumber in numeral of binary system.111



38. Express the following decimal system number in numeral of binary system.

173

39. Express the following decimal system number in numeral of binary system.

196

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number in numeral of binary system.

40. Express the following decimal system

236

41. Express the following decimal systemnumber in numeral of binary system.



42. Express the following decimal system number in numeral of binary system.

298

43. Express the following decimal systemnumber in numeral of binary system.331



44. Express the following decimal system number in numeral of binary system.

382

45. Express the following decimal system number in numeral of binary system. 515 Watch Video Solution 46. Express the following decimal system number in numeral of binary system.

1120

47. Express the following decimal system number in numeral of binary system.



48. Express the following binary system number in numeral of decimal system.

100

49. Express the following binary system number in numeral of decimal system.101



50. Express the following binary system number in numeral of decimal system.

110

51. Express the following binary system number in numeral of decimal system. 111 Watch Video Solution 52. Express the following binary system number in numeral of decimal system. 1000 Watch Video Solution

53. Express the following binary systemnumber in numeral of decimal system.1001



54. Express the following binary system number in numeral of decimal system.

1010

55. Express the following binary systemnumber in numeral of decimal system.1011

56. Express the following binary system number in numeral of decimal system.

1110

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57. Express the following binary system number in numeral of decimal system. 1111 Watch Video Solution 58. Express the following binary system number in numeral of decimal system. 10001 Watch Video Solution

59. Express the following binary systemnumber in numeral of decimal system.11001



60. Express the following binary system number in numeral of decimal system.

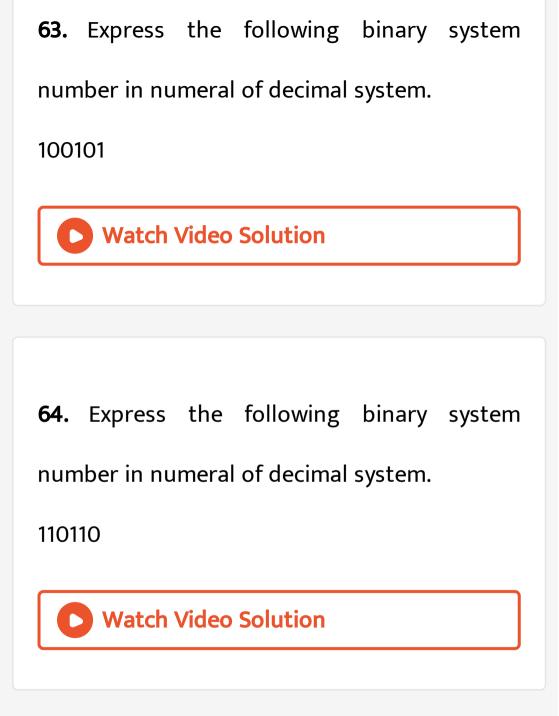
100101



61. Express the following binary system
number in numeral of decimal system.
11100
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62. Express the following binary system number in numeral of decimal system.

10011



65. Express the following binary systemnumber in numeral of decimal system.100001



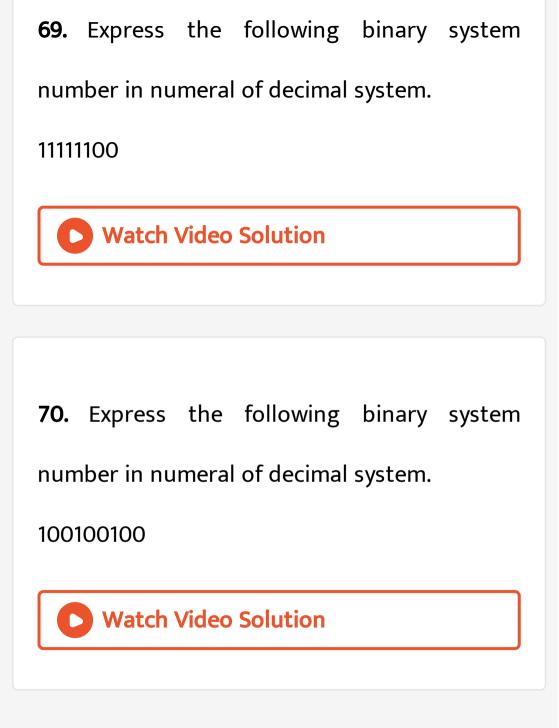
66. Express the following binary system number in numeral of decimal system.

10001001

67. Express the following binary system
number in numeral of decimal system.
11100101
Watch Video Solution

68. Express the following binary system number in numeral of decimal system.

1111111



71. Express the following binary systemnumber in numeral of decimal system.101000111



72. Express the following binary system number in numeral of decimal system.

1100111111

73. Evaluate the following sum (The base two

in each case)

101 + 11

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74. Evaluate the following sum (The base two

in each case)

101 + 101

in each case)

110 + 101

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76. Evaluate the following sum (The base two

in each case)

 $111 \div 111$

in each case)

1101 + 111



78. Evaluate the following sum (The base two

in each case)

1011 + 1010

in each case)

1100 + 1110

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80. Evaluate the following sum (The base two

in each case)

10101 + 1101

in each case)

 $10110 \div 1011$

Watch Video Solution

82. Evaluate the following sum (The base two

in each case)

 $11100\div111$

in each case)

10001 + 1000



84. Evaluate the following sum (The base two

in each case)

11101 + 10111

in each case)

111111 + 11110

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86. Evaluate the following sum (The base two

in each case)

111111 + 101010

in each case)

1011001 + 1110111

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88. Evaluate the following sum (The base two

in each case)

 $110\div110+11$

in each case)

1110 + 101 + 1010

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90. Evaluate the following sum (The base two

in each case)

1010 + 1101 + 101

in each case)

10101 + 1001 + 10110

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92. Evaluate the following sum (The base two

in each case)

1110 + 101 + 1001 + 110

in each case)

10010 + 1010 + 11010 + 10101

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94. Evaluate the following sum (The base two

in each case)

 $11011 \div 1001 + 100 + 10101$

in each case)

101010 + 10101 + 110101 + 101011

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96. Evaluate the following subtractions (base

in each case is two)

11 - 1

in each case is two)

11 - 10

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98. Evaluate the following subtractions (base

in each case is two)

110 - 100

in each case is two)

110 - 101

Watch Video Solution

100. Evaluate the following subtractions (base

in each case is two)

1100 - 101

in each case is two)

111-101



102. Evaluate the following subtractions (base

in each case is two)

1110 - 1010

in each case is two)

1000 - 101

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104. Evaluate the following subtractions (base

in each case is two)

111010 - 10100

in each case is two)

11001101 - 110101

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106. Evaluate the following subtractions (base

in each case is two)

10101 - 1010

in each case is two)

101101 - 1011



108. Evaluate the following subtractions (base

in each case is two)

11001101 - 1110000

in each case is two)

11110101 - 1101110

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110. Evaluate the following subtractions (base

in each case is two)

101100110 - 10011011

in each case is two)

110111010 - 101111

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112. Evaluate the following subtractions (base

in each case is two)

11101011101 - 1111111110

in each case is two)

110010101 - 1011110



114. Simplyfy (the base is two in each case)

110 - 1000 + 11



115. Simplyfy (the base is two in each case)

1010 - 1111 + 111

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116. Simplyfy (the base is two in each case)

1100 - 10000 + 1000

117. Simplyfy (the base is two in each case)

1011 - 1101 + 111

Watch Video Solution

118. Simplyfy (the base is two in each case)

10000 - 10100 + 1000

119. Simplyfy (the base is two in each case)

1110 - 10101 + 1100

Watch Video Solution

120. Simplyfy (the base is two in each case)

1010 + 110 - 101 - 111

121. Simplify (the base is two in each case)

1000 + 1011 - 100 - 1001

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122. Simplyfy (the base is two in each case)

1101 + 1010 + 11

123. Simplify (the base is two in each case)

110 + 1110 - 1000 - 1111

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124. Evaluate the following (the base in two in

each case) 101×111

each case) 111×111

Watch Video Solution

126. Evaluate the following (the base in two in

each case) 1001×101

each case) 111 imes 110

Watch Video Solution

128. Evaluate the following (the base in two in

each case) 1010 imes 101

each case) 110 imes 111

Watch Video Solution

130. Evaluate the following (the base in two in

each case) 1101 imes 1000

each case) 1110 imes 110

Watch Video Solution

132. Evaluate the following (the base in two in

each case) 1100 imes 1100

each case) 1101 imes 1011

Watch Video Solution

134. Evaluate the following (the base in two in

each case) 1111 imes 1100

each case) 10000 imes 1101

Watch Video Solution

136. Evaluate the following (the base in two in

each case) 1010 imes 10001

each case) 110110 imes 110011

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138. Evaluate the following (the base in two in

each case) 110010 imes 11011

each case) $1110 \div 101$

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140. Evaluate the following (the base in two in

each case) $1100 \div 11$

each case) $1111 \div 100$

Watch Video Solution

142. Evaluate the following (the base in two in

each case) $10101 \div 110$

each case) $100001 \div 111$

Watch Video Solution

144. Evaluate the following (the base in two in

each case) $101111 \div 110$

each case) $11011 \div 1100$

> Watch Video Solution

146. Evaluate the following (the base in two in

each case) $111101 \div 1110$

147. Evaluate the following (the base in two in

each case) $1001000 \div 1010$

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148. Evaluate the following (the base in two in

each case) $1010100 \div 1111$

149. Evaluate the following (the base in two in

each case) $1111100001 \div 1011001$

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150. Evaluate the following (the base in two in

each case) 100110101001 ÷ 101000

(111+101) imes 11

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152. Simplyfy, (the base is two in each cases)(110+11) imes101

(1011 - 110) imes 101

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154. Simplyfy, (the base is two in each cases)

 $(1001 + 111) \div 100$

 $(1100 + 1001) \div 111$

Watch Video Solution

156. Simplyfy, (the base is two in each cases)

 $(11101 - 100) \div 101$

 $(11111 - 1001) \div 100$

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 Name the following numerals in Indian place value system as well as in International Place value system.

7525625





2. Name the following numerals in Indian place value system as well as in International Place value system.

825329010



3. Name the following numerals in Indian place

value system as well as in International Place

value system.

90050061020



4. Name the following numerals in Indian place value system as well as in International Place value system.

72050263013

5. Name the following numerals in Indian place value system as well as in International Place value system.

523541312123

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6. Express the following number numerically

Eighty lakh seventy thousand twenty five

7. Express the following number numerically

Seventh Crore Three Lakh two Thousand and

Five.



8. Express the following number numerically

Forty two Arab Three crore seven lakh Three

Thousand four hundred two.

9. Express the following number numerically Fifty one Kharab two Arabsixty one crore Thirty two lakh twenty one thousand sixty nine.



10. Express the following number numerically

Three hundred forty million, seven hundred

thirty two thousand eight hundred twenty

one.

11. Express the following number numerically Fifty one billion twenty one million thirty two thousand sixty.

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12. Express the following number numerically Seven trillion one hundred forty billion six million two hundred thirty two thousand seventy two.





13. Name the number of Eighty lakh seventy thousand twenty five to Fifty one Kharab two Arabsixty one crore Thirty two lakh twenty one thousand sixty nine in international system.



14. Name the number of Forty two Billion Thirty Million seven hundred three thousand four hundred two and Fifty one billion twenty one million thirty two thousand sixty in Indian

system.



15. Write the place values of the digits within small squares of the following numbers in Inidian place value system and in international place value system.

2[7]42975

16. Write the place values of the digits within small squares of the following numbers in Indian place value system and in international place value system.

[2]43[3]56012

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17. Write the place values of the digits within small squares of the following numbers in Indian place value system and in international

place value system.

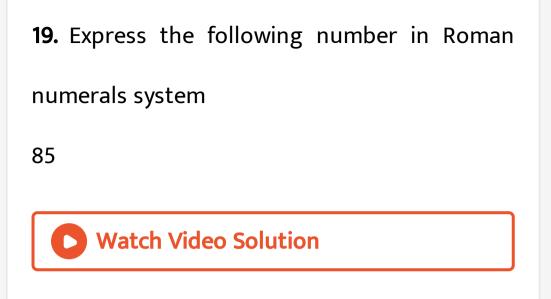
[67]52431014



18. Write the place values of the digits within small squares of the following numbers in Indian place value system and in international place value system.

[67]52431014





numerals system

99

numerals system

459

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22. Express the following number in Roman

numerals system

999

numerals system

1249



24. Express the following number in Roman

numerals system

3464

25. Express the following number in Romannumerals system6261

26. Express the following numbers in Roman numerals system

10,499

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numerals system

6478

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28. Express the following number in Roman numerals system

9601

numeral system

CIX



30. Express the following number in common

numeral system

XLIX

numeral system

CCCXCIX

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32. Express the following number in common

numeral system

DCLXI

numeral system

MCV

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34. Express the following number in common

numeral system

MMCCCXC

numeral system

 $\overline{C}DLC$



36. Express the following number in common

numeral system

 $\overline{V}DLIX$

numeral system

CLXV

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38. Express the following number in common

numeral system

XIIDII

39. Evaluate the following in Roman numerals.

XXX + XL



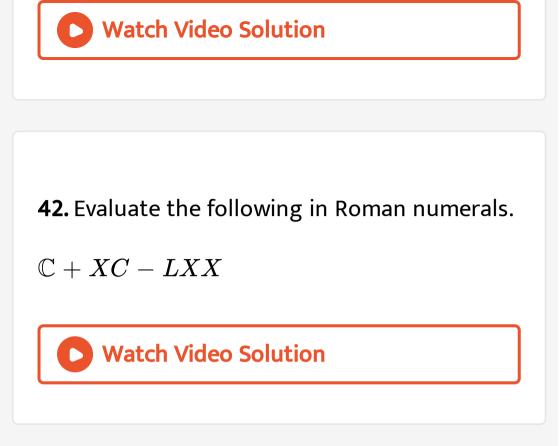
40. Evaluate the following in Roman numerals.

CL + XV

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41. Evaluate the following in Roman numerals.

XC + L + V



43. Evaluate the following in Roman numerals.

D + CD + DC

44. Evaluate the following in Roman numerals.

LX + XL - XX



45. Evaluate the following in Roman numerals.

XX + XXX + XC - XV

46. Find the correct answer giving proper

reason

ICX = 109 = CIX



47. Find the correct answer giving proper reason

 $I\mathbb{C} = 199 = CXCIX$

48. Find the correct answer giving proper

reason

VIX = 5 + 10 - 1 = 14 = XIV

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49. Find the correct answer giving proper

reason

XD = 490 = CDXC

50. Find the correct answer giving proper

reason

LM = 1000 - 50 = 950 = CML

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51. Find the correct answer giving proper

reason

VL = 50 - 5 = 45 = XLV.

52. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

25

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53. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c)

base seven and (d) base eight

32



54. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

64

55. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

76

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56. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c)

base seven and (d) base eight

104



57. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

50

58. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

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59. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c)

base seven and (d) base eight

629



60. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

749

61. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

1042

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62. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c)

base seven and (d) base eight

1268



63. Express the following numbers of common system of numeration into a system of numeration of (a) base three (b) base five (c) base seven and (d) base eight

1042

64. Express the following number of common number system to a number system of (a) base three (b) base five

2578

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65. Express the following numbers of common system of numeration into a system of numeration (a) base eleven (b) base twelve 9190

66. Express the following numbers of common system of numeration into a system of numeration (a) base eleven (b) base twelve

11731

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67. Determine the decimal conversion of the following numbers of different numeration

system.

 $(233)_{eight}$.

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68. Determine the decimal conversion of the

following numbers of different numeration system.

 $(125)_{seven}$.

69. Determine the decimal conversion of the following numbers of different numeration system.

 $(341)_{five}.$

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70. Determine the decimal conversion of the following numbers of different numeration system.

 $(101112)_{three}.$



71. Determine the decimal conversion of the following numbers of different numeration system.

 $(1100100)_{two}$.

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72. Determine the decimal conversion of the following numbers of different numeration

system.

 $(1100110)_{two}.$

Watch Video Solution

73. Determine the decimal conversion of the

following numbers of different numeration system.

 $(6150)_{seven}$

74. Determine the decimal conversion of the following numbers of different numeration system.

 $(6244)_{eight}$.

Watch Video Solution

75. Determine the decimal conversion of the following numbers of different numeration system.

 $(1636)_{eight}.$



76. Determine the decimal conversion of the following numbers of different numeration system.

 $(31001)_{five}.$

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77. Determine the decimal conversion of the following numbers of different numeration

system.

 $(3112)_{four}$.

Watch Video Solution

78. Determine the decimal conversion of the following numbers of different numeration system.

 $(21130)_{four}.$

79. r' is the decimal of a system of numeration.

Determine r, when

The decimal conversion of $(121)_r$ is 16



80. r' is the decimal of a system of numeration.

Determine r, when

The decimal conversion of (123)_r` is 38.

81. r' is the decimal of a system of numeration.

Determine r, when

The decimal conversion of $(124)_r$ is 52.

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82. r' is the decimal of a system of numeration.

Determine r, when

The decimal conversion of $(144)_r$ is 100.

83. 2 and 3 are numerals of both the numerals systems whose base are x and x + 1. If the decimal conversion of $(32)_x$ is y and that of $(23)_{x+1}$ is y - 1, determine x and y.

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84. x is numeral of two numeral systems whose basis are p and p + 2. A is a two digit number consists x alone. If the decimal conversion of $(A)_p$ is 10 and that of $(A)_{p+2}$ is 14, then determine x and p.



85. 1 and 2 are the numerals of both numeral system whose basis are x and 2x + 1. If decimal conversion of $(21)_x$ is y, then show that the decimal conversion of $(21)_{2x+1}$ is 2y + 1.

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86. 2 and 3 are the numerals of both the numeral systems whose basis are x and x + 1.

If th decimal conversion of $(23)_x$ is A then show that the decimal conversion of $(23)_{x+1}$ is A+2.

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87. Express the following decimal and vulgar fraction in the numeral systems whose bases are indicated.

.3872 to the base five.



88. Express the following decimal and vulgar fraction in the numeral systems whose bases are indicated.

.5625 to the base six.

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89. Express the following decimal fraction in

the numeral systems whose bases are indicated.

.46875 to the base eight.

90. Express the following decimal and vulgar

fraction in the numeral systems whose bases

are indicated.

 $\frac{11}{15}$ to the base three.

> Watch Video Solution

91. Express the following decimal and vulgar

fraction in the numeral systems whose bases

are indicated.

```
\frac{11}{15} to the base three.
```



92. Express the following decimal and vulgar

fraction in the numeral systems whose bases are indicated.

 $\frac{3}{7}$ to the base three.

93. Express the following decimal and vulgar fraction in the numeral systems whose bases are indicated

 $\frac{32}{35}$ to the base seven.

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94. Express the following radix fractions whose

bases are indicated into the decimal system.

 $(.05343)_{six}$.

95. Express the following radix fractions whose bases are indicated into the decimal system.

 $(.05343)_{six}$.



96. Express the following numbers in the

numeral system whose bases are indicated.

213.3104 to the base five.

97. Express the following numbers in the

numeral system whose bases are indicated.

6233.21875 to the base eight.



98. Express the following numbers in the

numeral system whose bases are indicated.

$$1073 \frac{13}{16}$$
 to the base six.

99. Express the following numbers in the

numeral system whose bases are indicated.

$$981\frac{32}{125}$$
 to the base five.

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100. Express the following numbers into the

decimal system.

 $(434.3213)_{six}$.

101. Express the following numbers into the

decimal system.

 $(716.16)_{eight}$.