MATHS

BOOKS - BEYOND PUBLICATION

REAL NUMBERS

Example

1. Find 'q' and 'r' of the following pairs of positibe integers 'a' and 'b', satisfied a=bq+r

a = 13, b = 3

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2. Find 'q' and 'r' of the following pairs of positibe

integers 'a' and 'b', satisfied a=bq+r

a = 8, b = 80

3. Find q and r for the following pairs of positive

integers a and b, satisfying $a = bq + r$. (iii)

$a = 125, b = 5$

4. Find q and r for the following pairs of positive integers a and b, satisfying $a = bq + r$. (iv) $a = 132, b = 11$

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5. Find the HCF of the following by using Euclid division lemma. (i) 50 and 70

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6. Find the HCF of the following by using Euclid division lemma. (ii) 96 and 72

A. 23

B. 24

C. 25

D. 26

Answer:

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7. Find the HCF of the following by using Euclid division lemma. (iii) 300 and 550

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8. Find the HCF of the following by using Euclid division lemna

1860 and 2015

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9. Can you find the HCF of 1.2 and 0.12? Justify your answer.

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10. Show that every positive even integer is of the form 2q, and that every positive odd integer is of the form 2q + 1, where q is some integer.

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11. Show that any positive odd integer is of the form $4q + 1$ or $4q + 3,$ where q is some integer.

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12. Use Euclid's division algorithm to find the HCF of

(i) 900 and 270

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13. Use Euclid's division algorithm to find the HCF of

(ii) 196 and 38220

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14. Use Euclid's division algorithm to find the HCF of

(iii) 1651 and 2032

15. Use Euclid division lemma to show that any positive odd integer is of the form $6q + 1$ or $6q + 5$, where q is some integers.

16. Use Euclids division lemma to show that the cube of positive integer is of the form $9m$, $9m + 1$ or $9m + 8$.

(OR)

Show that the cube of any positive integer is of

form $9m$ or $9m + 1$ or $9m + 8$, where m is an integer.

17. Show that one and only one out of $n, n + 2$ or $n + 4$ is diviseble by 3, where n is any positive integer.

18. If $r = 0$, then what is the relationship between a,b and q in $a = bq + r$ of Euclid division lemma?

19. Express 2310 as a product of prime factors. Also see how your friends have factorized the number. Have they done it as you ? Verify your final product with your friend's result. Try this for 3 or 4 more numbers. What do you conclude?

20. Find the HCF and LCM of the following given pairs of numbers by prime factorisation

120,9

21. Find the HCF and LCM of the following given pairs of numbers by prime facrtorization. (ii) 50,60

22. Find the HCF and LCM of the following given pairs of numbers by prime facrtorization. (iii) 37,49

23. Consider the number 4^n where n is a natural number. Check whether there is any value of n which 4^n ends with the digit zero?

24. Find the HCF and LCM of 12 and 18 by the prime factorization method.

25. Show that $3^n \times 4^m$ cannot end with the digit 0 or 5 for any natural numbers 'n' and 'm'.

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26. Express each of the following numbers as a product of its prime factors. (i) 140

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27. Express each of the following numbers as a product of its prime factors. (ii) 156

28. Express each of the following numbers as a product of its prime factors. (iii) 3825

29. Express each of the following numbers as a product of its prime factors. (iv) 5005

30. Express each of the following numbers as a product of its prime factors. (v) 7429

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31. Find the L.C.M. and H.C.F of the following integers by the prime factorization method. (i) 12, 15 and 21

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32. Find the L.C.M. and H.C.F of the following integers by the prime factorization method. (ii) 17, 23 and 29

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33. Find the L.C.M. and H.C.F of the following integers by the prime factorization method. (iii) 8,9 and 25

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34. Find the L.C.M. and H.C.F of the following integers by the prime factorization method. (iv) 72 and 108

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35. Find the L.C.M. and H.C.F of the following integers by the prime factorization method. (v) 306 and 657

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36. Check whether 6^n can end with the digit '0' for any natural numbers n.

37. Explain why $7 \times 11 \times 13 + 13$ and $7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1 + 5$ are composite nubmers.

38. How will you show that $(17 \times 11 \times 2) + (17 \times 11 \times 5)$ is a composite numbers ? Explain.

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39. What is the last digit of 6^{100} ?

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40. Write the following terminating decimals in the form of p/q, $q \neq 0$ and p, q are co-primes (i) 15.265

What can you conclude about the denominators through this process ?

41. Write the following terminating decimals in the form of $p/q, q \neq 0$ and p, q are co-primes (ii) 0.1255

What can you conclude about the denominators through this process ?

42. Write the following terminating decimals in the form of p/q, $q \neq 0$ and p, q are co-primes (iii) 0.4 What can you conclude about the denominators through this process ?

43. Write the following terminating decimals in the form of p/q, $q \neq 0$ and p, q are co-primes (iv) 23.34 What can you conclude about the denominators through this process ?

44. Write the following terminating decimals in the form of p/q, $q \neq 0$ and p, q are co-primes (v) 1215.8 What can you conclude about the denominators through this process ?

45. Write the following rational numbers in the form of p/q, where q is of the form $2^n 5^m$ where n, m are non-negative integers and then write the numbers in their decimal form. (i) $\dfrac{3}{4}$

46. Write the following rational numbers in the form of p/q, where q is of the form $2^n 5^m$ where n, m are non-negative integers and then write the numbers in their decimal form. (ii) $\dfrac{7}{25}$

47. Write the following rational numbers in the form of p/q, where q is of the form $2^n 5^m$ where n, m are non-negative integers and then write the numbers in their decimal form. (iii) $\dfrac{51}{64}$

48. Write the following rational numbers in the form of $p/q,$ where q is of the form $2^n 5^m$ where n, m are non-negative integers and then write the numbers in their decimal form. (iv) $\dfrac{14}{25}$

49. Write the following rational numbers in the form of $p/q,$ where q is of the form $2^n 5^m$ where

n, m are non-negative integers and then write the numbers in their decimal form. (v) $\dfrac{80}{100}$

50. Write the folllowing rational numbers as decimal form and find out the block of repeating digits in the quotient. (i) $\dfrac{1}{3}$

51. Write the folllowing rational numbers as decimal form and find out the block of repeating

digits in the quotient. (ii) $\dfrac{2}{7}$

52. Write the folllowing rational numbers as decimal form and find out the block of repeating digits in the quotient. (iii) $\dfrac{5}{11}$

53. Write the folllowing rational numbers as decimal form and find out the block of repeating digits in the quotient. (iv) $\dfrac{10}{13}$

54. Using the above theorems, without actual division, state whether decimal form of the following rational numbers are terminating or non-terminating, repeating decimals. (i) $\dfrac{16}{125}$

55. Using the above theorems, without actual division, state whether decimal form of the following rational numbers are terminating or non-terminating, repeating decimals. (ii) $\dfrac{25}{32}$

56. Using the above theorems, without actual division, state whether decimal form of the following rational numbers are terminating or non-terminating, repeating decimals. (iii) $\dfrac{100}{81}$

57. Using the above theorems, without actual division, state whether decimal form of the

following rational numbers are terminating or non-terminating, repeating decimals. (iv) $\dfrac{41}{75}$

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58. Write the decimal expansion of the following rational numbers without actual division. (i) $\dfrac{35}{50}$

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59. Write the decimal expansion of the following rational numbers without actual division. (ii) $\dfrac{21}{25}$

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60. Write the decimal expansion of the following rational numbers without actual division. (iii) $\dfrac{7}{8}$

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61. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating repeating decimals. (i) $\dfrac{3}{8}$

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62. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating repeating decimals. (ii) $\dfrac{229}{400}$

63. Write the following rational numbers in their decimal form and also state which are terminating and which are non-terminating, repeating decimal. $4\dfrac{1}{5}$

64. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating repeating decimals. (iv) $\dfrac{2}{11}$

65. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating repeating decimals. (v) $\dfrac{8}{125}$

66. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (i) $\dfrac{13}{3125}$

67. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (ii) $\dfrac{11}{12}$

68. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (iii) $\dfrac{64}{455}$

69. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (iv) $\dfrac{15}{1600}$

70. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (v) $\dfrac{29}{343}$

71. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (vi) $\dfrac{23}{2^3 \times 5^2}$

72. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (vii) $\dfrac{129}{2^2.5^7.7^5}$

73. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (viii) $\dfrac{9}{15}$

74. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (ix) $\dfrac{36}{100}$

75. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (x) $\dfrac{77}{210}$

76. Write the following rationals in decimal form using

$$\frac{13}{25}$$

77. Write the decimal expansion of the following rationals numbers

$$\frac{15}{16}$$

78. Write the decimal expansion of the following rationals numbers

$$\frac{23}{2^3 5^2}$$

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79. Write the decimal expansion of the following rationals numbers

$$\frac{7218}{3^2 5^2}$$

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80. Write the decimal expansion of the following rationals numbers

$$\frac{143}{110}$$

81. The decimal form of some real numbers are given below. In each case, decide whether the number is rational or not. If it is rational, and expressed in form p/q, what can you say about the prime factors of q? (iii) 43.123456789

82. The decimal form of some real numbers are given below. In each case, decide whether the number is rational or not. If it is rational, and expressed in form p/q, what can you say about the prime factors of q? (ii) 0.120120012000120000..........

83. The decimal form of some real numbers are given below. In each case, decide whether the number is rational or not. If it is rational number and expressed in form $\dfrac{p}{q}$, What can you say about

the prime factors of q?

43. $\overline{123456789}$

84. Verify the statement proved above for $p = 2, p = 5$ and for $a^2 = 1, 4, 9, 25, 36, 49, 64$ and 81.

85. Show that $\sqrt{2}$ is irrational.

86. Show that $5 - \sqrt{3}$ is irrational.

87. Show that $3\sqrt{2}$ is irrational.

88. Prove that $\sqrt{2} + \sqrt{3}$ is irrational.

89. Prove that the following are irrational. (i) $\dfrac{1}{\sqrt{2}}$

90. Prove that the following are irrational. (ii) $\sqrt{3} + \sqrt{5}$

91. Prove that the following are irrational. (iii) $6 + \sqrt{2}$

92. Prove that the following are irrational. (iv) $\sqrt{5}$

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93. Prove that the following are irrational. (v) $3 + 2\sqrt{5}$

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94. Prove that $\sqrt{p} + \sqrt{q}$ is an irrational, where p,q are primes.

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95. Draw the graphs of $y = 2^x$, $y = 4^x$, $y = 8^x$ and $y = 10^x$ in a single graph and mention your observation

96. Write the nature of y.a and x in $y = a^x$. Can you determine the value of x for a given y ? Justify your answer.

97. You know that $2^1 = 2, 4^1 = 4, 8^1 = 8$ and $10^1 = 10.$ What do you notice about the values of $\log_2 2, \log_4 4, \log_8 8$ and $\log_{10} 10$? What can you generalise from this?

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98. Does $\log_{10} 0$ exist?

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99. We know that, If $7 = 2^x$ then $x = \log_2 7$. Then what is the value of $2^{\log_2 7}$? Justify your answer. Generalise the above by taking some more examples for $a^{\log_a N}$.

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100. write the powers to which the bases to be raised in the following

$7 = 2^x$

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101. write the powers to which the bases to be raised in the following

$$10 = 5^b$$

102. Write the powers to which the bases to be raised in the following. (iii) $\dfrac{1}{81} = 3^c$

103. write the powers to which the bases to be raised in the following

$$100 = 10^c$$

104. write the powers to which the bases to be raised in the following

$$\frac{1}{257} = 4^n$$

105. Express the logarithms of the following into sum of the logarithms. (i) 35×46

106. Express the logarithms of the following into sum of the logarithms. (ii) 235×437

107. Express the logarithms of the following into sum of the logarithms. (iii) 2437×3568

108. Express the logarithms of the following into difference of the logarithms. (i) $\dfrac{23}{34}$

109. Express the logarithms of the following into difference of the logarithms. (ii) $\dfrac{373}{275}$

110. Express the logarithems of the following into difference of the logarithem

$4525 \div 3734$

111. Express the logarithms of the following into difference of the logarithms. (iv) $\dfrac{5055}{3303}$

112. By using the formula $\log_a x^n = n \log_a x$, convert the following. (i) $\log_2 7^{25}$

113. By using the formula $\log_a x^n = n \log_a x$, convert the following. (ii) $\log_5 8^{50}$

114. By using the formula $\log_a x^n = n \log_a x$, convert the following. (iii) $\log 5^{23}$

115. Write the following relation in expontial form and find the values of respective variables. (i)

$$\log_2 32 = x$$

116. Write the following relation in expontial form and find the values of respective variables. (iI) $\log_5 625 = y$

117. Write the following relation in expontial form and find the values of respective variables. (iii) $\log_{10} 10000 = z$

118. Write the following relation in expontial form and find the values of respective variables. (iv) $\log_7 \dfrac{1}{343} = -a$

119. Find the value of $\log_2^{32}$

120. (ii) Find the values of $\log_c \sqrt{c}$.

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121. Find the value of $\log_{10}^{0.001}$.

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122. (iv) Find the value of $\log_{\frac{2}{3}} \dfrac{8}{27}$.

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123. Expand $\log \dfrac{343}{125}$

124. Write $2\log 3 + 3\log 5 - 5\log 2$ as a single logarithm.

125. Solve $3^x = 5^{x-2}$.

126. Find x if $2\log 5 + \dfrac{1}{2}\log 9 - \log 3 = \log x.$

127. Determine the values of the following. (i)

$\log_{25} 5$

128. Determine the values of the following. (ii)

$\log_{81} 3$

129. Determine the values of the following. (iii)

$$\log_2 \left(\frac{1}{16} \right)$$

130. Determine the values of the following. (iv)

$$\log_7 1$$

131. Determine the values of the following. (v)

$$\log_x \sqrt{x}$$

132. Determine the values of the following. (vi)

$\log_2 512$

133. Determine the values of the following. (vii)

$\log_{10} 0.01$

134. Determine the values of the following. (viii)

$$\log_{\frac{2}{3}}\left(\frac{8}{27}\right)$$

135. Determine the value of the following

$$2^{2+\log 32 base 2}$$

136. Write each of the following expressions as log

N. Determine the value of N. (You can assume the

base is 10, but the results are identical which ever is used).

log2+log5

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137. Write each of the following expressions as log N. Determine the value of N. (You can assume the base is 10, but the results are identical which ever is used).

log 16- log 2

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138. Write each of the following expressions as log N. Determine the value of N. (You can assume the base is 10, but the results are identical which ever is used).

3 log 4

139. Write each of the following expressions as log N. Determine the value of N. (You can assume the base is 10, but the results are identical which ever is used).

2 log 3- 3 log 2

140. Write each of the following expressions as log N. Determine the value of N. (You can assume the base is 10, but the results are identical which ever is used).

log 243- log 1

141. Write each of the following expressions as log N. Determine the value of N. (You can assume the base is 10, but the results are identical which ever is

used).

log 10 + 2log 3- log 2

142. Evaluate each of the following in terms of x and y, if it is given $x = \log_2 3$ and $y = \log_2 5$. (i) $\log_2 15$

143. Evaluate each of the following in terms of x and y, if it is given $x = \log_2 3$ and $y = \log_2 5$. (ii)

$\log_2 7.5$

144. Evaluate each of the following in terms of x and y, if it is given $x = \log_2 3$ and $y = \log_2 5$. (iii) $\log_2 60$

145. Evaluate each of the following in terms of x and y, if it is given $x = \log_2 3$ and $y = \log_2 5$. (iv) $\log_2 6750$

146. Expand the following. (i) $\log 1000$

147. Expand the following. (ii) $\log \left[\dfrac{128}{625} \right]$

148. Expand the following. (iii) $\log x^2 y^3 z^4$

149. Expand the following

$$\log\left(\frac{p^2 q^3}{r}\right)$$

150. Expand the following. (v) $\log \sqrt{\dfrac{x^3}{y^2}}$

151. If $x^2 + y^2 = 25xy$. then prove that

$2\log(x + y) = 3\log 3 + \log x + \log y$.

152. If $\log\left(\dfrac{x+y}{3}\right) = \dfrac{1}{2}(\log x + \log y)$, then find the values of $\dfrac{x}{y} + \dfrac{y}{x}$.

153. If $(2.3)^x = (0.23)^y = 1000$ then find the value of $\dfrac{1}{x} - \dfrac{1}{y}$.

154. If $2^{x+1} = 3^{1-x}$ then find the value of x.

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155. Is (i) log 2 is rational or irrational ? Justify your answer.

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156. Is (ii) log 100 is rational or irrational ? Justify your answer.

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157. Can the number 6^n, n being a natural number, end with the digit 5 ? Give reason.

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158. Is $7 \times 5 \times 3 \times 2 + 3$ a composite number ? Justify your answer.

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159. Prove that $\left(2\sqrt{3} + \sqrt{5}\right)$ is an irrational number. Also check whether $\left(2\sqrt{3} + \sqrt{5}\right)\left(2\sqrt{3} - \sqrt{5}\right)$ is rational or irrational.

160. If $x^2 + y^2 = 6xy$, prove that 2 log (x + y) = logx + logy + 3 log 2

161. Find the number of digit in 4^{2013}, if $\log_{10} 2 = 0.3010$.

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162. Use Euclid's division algorithm to find the HCF of

500 and 150

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163. Use Euclid's division algorithm to find the HCF of

194 and 35890

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164. Use Euclid's division algorithm to find the HCF of

1550 and 3150

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165. Use Euclid division Lemma to show that any positive even interger is of the form 4q or 4q+2 or 4q+4 when q is some integer.

166. Use Eulcid division Lemma to show that any positive odd integer is the form 2q+1 , 2q+3 or 2q+5 when q is some integer.

167. Use Euclid division Lemma to show that any positive even integer is of the form. 2q or 2q+2 or 2q+4 where q is some integer.

168. Express each number as a product of its prime factos

540

169. Express each number as a prodcut of its prime factors.

882

170. Express each number as a product of its prime factos

1764

171. Express each number as a product of its prime factos

1080

172. Express each number as a product of its prime factos

6292

173. Find the LCm and HCF of the following integers by the prime factorisation method.

10, 15 and 35

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174. Find the LCm and HCF of the following integers by the prime factorisation method.

13, 17 and 23

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175. Find the LCm and HCF of the following integers by the prime factorisation method.

7,9 and 25

176. Find the LCm and HCF of the following integers by the prime factorisation method.

84 and 108

177. Find the LCm and HCF of the following integers

by the prime factorisation method.

234 and 747

178. Explain why $5 \times 11 \times 12 + 12$ is a composite

number.

179. How will you show that

$$41 \times 17 \times 61 \times 3 + 41 \times 17 \times 31 \times 5 \quad \text{is} \quad \text{a}$$

composite number? Explain.

180. Expenses each number as a product of its prime factors.

504

181. Expenses each number as a product of its prime factors.

756

182. Expenses each number as a product of its prime factors.

1800

183. Expenses each number as a product of its prime factors.

8228

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184. Expenses each number as a product of its prime factors.

6084

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185. Explain why $31 \times 17 \times 13 \times 12 + 31 \times 17 \times 5$ a composite number.

186. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, a repeating decimal.

$\dfrac{5}{8}$

187. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, a repeating decimal.

$$\frac{17}{200}$$

188. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, a repeating decimal.

$$\frac{21}{125}$$

189. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, a repeating decimal.

$$\frac{7}{11}$$

190. Without actually performing division. State whether the folloiwng rational numbers will have a terminating decimal form or a non-terminating,

repeating decimal form.

$$\frac{14}{625}$$

191. Without actually performing division. State whether the folloiwng rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form.

$$\frac{13}{12}$$

192. Without actually performing division. State whether the folloiwng rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form.

$$\frac{74}{455} \backslash$$

193. Without actually performing division. State whether the folloiwng rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form.

$$\frac{76}{200}$$

194. Write the decimal expansion of the following:

$$\frac{27}{25}$$

195. Write the decimal expansion of the following:

$$\frac{35}{32}$$

196. Write the decimal expansion of the following:

$$\frac{43}{2^3 5^2}$$

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197. Write the decimal expansion of the following:

$$\frac{729}{3^2 5^2}$$

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198. Write the decimal expansion of the following

$$\frac{17}{25}$$

199. Write the decimal expansion of the following

$$\frac{35}{16}$$

200. Write the decimal expansion of the following

$$\frac{33}{2^3 5^2}$$

201. Write the decimal expansion of the following

$$\frac{243}{3^2 5^2}$$

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202. Prove the following are irrational.

$$\sqrt{2} + \sqrt{5}$$

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203. Prove the following are irrational.

$$\sqrt{7} + \sqrt{3}$$

204. Prove the following are irrational.

$7 + \sqrt{3}$

205. Prove the following are irrational.

$6 - \sqrt{2}$

206. Prove that $\sqrt{p} - \sqrt{q}$ is irrational when p,q are primes.

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207. Prove that the following are irrational. (ii) $\sqrt{3} + \sqrt{5}$

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208. Prove that the following are irrational. $\sqrt{3}$

209. Prove that the following are irrational.

$$7 + \sqrt{2}$$

210. Determine the value of the following

$$\log_{27}^{3}$$

211. Determine the value of the following

$$\log_{625}^5$$

212. Determine the value of the following

$$\log_2^{\frac{1}{64}}$$

213. Determine the value of the following

$$\log_5^{\frac{1}{5}}$$

214. Determine the value of the following

$$\log_a^{\sqrt{a}}$$

215. Determine the value of the following

$$\log_2^{256}$$

216. $\log_{10} 0.001 =$

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217. Write each of the following expressions as log

N. Determine the value of N.

log 2+ log 50

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218. Write each of the following expressions as log

N. Determine the value of N.

log 50-log 2

219. Write each of the following expressions as log

N. Determine the value of N.

4 log 3

220. Simplify each of the following expressionsas

logN. Determine the value of N.

3 log 2 -2 log 3

221. Write each of the following expressions as log

N. Determine the value of N.

log 343 + log 1

222. Write each of the following expressions as log

N. Determine the value of N.

3 log 2 + 2 log 5-4log 2

223. Evaluate each of the following in terms of x and y, if it is given $x = \log_2 3$ and $y = \log_2 5$. (ii) $\log_2 7.5$

224. Evaluate each of the following in terms of x and y, if it is given $x = \log_2^3$ and $y = \log_2^5$.

$\log_2^{4.5}$

225. Evaluate each of the following in terms of x and y, if it is given $x = \log_2^3$ and $y = \log_2^5$.

$\log_2^{90}$

226. Expand the following. (i) $\log 1000$

227. Expand the following

$\log\left(\dfrac{243}{625}\right)$

228. Expand the following

$$\log\left(x^3 y^2 z^5\right)$$

229. Expand the following

$$\log\left(\frac{p^3 q^4}{r}\right)$$

230. Expand the following

$$\log \sqrt{\frac{x^5}{y^3}}$$

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231. Determine the value of the following

$$\log_{64}^{4}$$

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232. Determine the value of the following

$$\log_{216}^{6}$$

233. Determine the value of the following

$$\log_3 ^{\frac{1}{81}}$$

234. Determine the value of the following

$$\log_b ^{\sqrt{b}}$$

235. Determine the value of the following

$$\log_5^{625}$$

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236. Determine the value of the following

$$\log_{\frac{2}{5}}^{\frac{16}{625}}$$

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237. Determine the value of the following

$$\log_{10}^{0.0001}$$

238. Determine the value of the following

$$3^{2+\log_3^7}$$

239. Write each of the following expressions as below. Determine the value of N. (take the base as 10)

log 4+ log 25

240. Write each of the following expressions as below. Determine the value of N. (take the base as 10)

log 100 - log 2

241. Write each of the following expressions as below. Determine the value of N. (take the base as 10)

3 log 5

242. Write each of the following expressions as below. Determine the value of N. (take the base as 10)

2log 4- 3 log 2

243. Write each of the following expressions as logN. Determine the value of N. (take the base as 10)

log 625+ log 1

244. Write each of the following expressions as logN. Determine the value of N. (take the base as 10)

2 log 3+ 3log 4 - 2 log 5

245. Find the value of $\log_{10}^{0.001}$.

246. Find the LCM and HCF of the following integers by the prime factorization method. 72 and 108

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247. Write 2log3+3log5 -5log2 as a single logarithm.

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248. Prove that the $\dfrac{1}{\sqrt{3}}$ is irrational.

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249. Prove that the following are irrational. (v)

$$3 + 2\sqrt{5}$$

250. Determine the value of $\log_{\frac{3}{5}} \frac{\frac{243}{3125}}{}$

251. Solve $7^x = 9^{x-2}$

252. Establish the relation among the sets of Real numbers, Rational, Irrational, Integers, whole numbers and Natural numbers using Venn Diagrams.

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253. Prove that $2\sqrt{5} + \sqrt{7}$ is an Irrational Number. Also check whether $\left(2\sqrt{5} + \sqrt{7}\right)\left(2\sqrt{5} - \sqrt{7}\right)$ a rational or Irrational.

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254. Insert 4 rational numbers between $\dfrac{3}{4}$ and 1 without using $\dfrac{a+b}{2}$ formula.

255. Write any three numbers of two digit its. Find the LCM and HCF for the above numbers by the Prime Factorization method.

256. Give an example for each of the following:

(i) The product of two irrational numbers is a rational number.

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257. Give an example for each of the following:

(ii) The product of two irrational numbers is an irrational number.

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258. Find the value of $\log_5 125$.

259. If $x^2 + y^2 = 7xy$ then show that

$2\log(x + y) = \log x + \log y + 2\log 3$.

260. Use Euclid's division lemma to show that the cube of any positive integer is of the form $7m$ or $7m + 1$ or $7m + 6$.

261. Prove that $\sqrt{2} - 3\sqrt{5}$ is a irrational number.

262. Express the number 540 as a product of it's prime factors.

263. Express the number 822 as a product of it's primne factors.

264. 10,15,35 are the integers then find the L.C.M and H.C.F by the prime factorization method.

265. 7,9, 25 are the integers then find the L.C.M and H.C.F. by the prime factorisation method.

266. 84,108 are the integers then find the L.C.M. and

H.C.F. by the prime factorisation method.

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267. 234 and 747 are the integers then find the

L.C.M and H.C.F. by the prime factorisation method.

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268. Explain why $5 \times 11 \times 12 + 12$ is a composite number.

269. How will you show that $41 \times 17 \times 61 \times 3 + 41 \times 17 \times 31 \times 5$ is a composite number? Explain.

270. Write the number $\dfrac{17}{200}$ as a decimal form

271. Write the number $\dfrac{5}{8}$ as a decimal form.

272. Prove the following are irrational.

$\sqrt{2} + \sqrt{5}$

273. Prove that $7 + \sqrt{3}$ is a irrational number.

274. Find the logarithm of 3025×3041

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275. Find the logarithm of 4046×5021

▶ **Watch Video Solution**

276. Find the logarithm of $\dfrac{2026}{2043}$

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277. Prove that $\sqrt{3} + \sqrt{7}$ is irrational.

278. Prove that $\sqrt{5} + \sqrt{11}$ is irrational.

279. Write the $\dfrac{253}{110}$ as decimal form.

280. Express the following numbers as a product of its prime factor.

250

281. Express the following numbers as a product of its prime factor.

476

282. Express the following numbers as a product of its prime factor.

525

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283. Prove that $6 + \sqrt{2}$ is the irrational number.

> ▶ Watch Video Solution

284. Find the value of $\log_3 3^{\frac{1}{9}}$.

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285. HCF of 1 and 243.

286. $\sqrt{12544} = \ldots\ldots\ldots\ldots$

287. $\dfrac{3}{2}(\log x) - (\log y) - \ldots\ldots$

288. Expand form of log 1000 is

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289. log form of $3^5 = 243$ is...........

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Exercise

1. Use Euclid's division algorithm to find the HCF of 270 and 450

2. Use Euclid's division algorithm to find the HCF of

197 and 39006

3. Use Euclid's division algorithm to find the HCF of

3302 and 4064.

4. Use Euclid division lemma to show that any positive even integer is of the form 6q or 6q+2 or 6q+4, where q is some intergers.

5. Express each number as a prodcut of its prime factors.

648

6. Express each number as a prodcut of its prime factors.

864

7. Express each number as a prodcut of its prime factors.

450

8. Express each number as a prodcut of its prime factors.

882

9. Express each number as a prodcut of its prime factors.

1144

10. Find the LCM and HCF of the following integers by applying the prime factorisation.

14,20, 18

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11. Find the LCM and HCF of the following integers by applying the prime factorisation.

13,19, 23

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12. Find the LCM and HCF of the following integers by applying the prime factorisation.

48, 72

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13. Find the LCM and HCF of the following integers by applying the prime factorisation.

156, 195

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14. Find the LCM and HCF of the following integers by applying the prime factorisation.

80, 96, 112

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15. Explain why $19 \times 23 \times 29 + 17$ is a composite number ?

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16. How will you show that $(31 \times 37 \times 41 \times 3) + (31 \times 37 \times 41 \times 5)$ is a composite number? Explain (Hint: A composite number can be factorised as the product of primes.)

17. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, repeating decimal expansions.

$\dfrac{1}{8}$

18. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, repeating decimal expansions.

$$\frac{11}{30}$$

19. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, repeating decimal

expansions.

$$\frac{13}{44}$$

20. Write the following rational numbers in their decimal form and also state which are terminating and which have non-terminating, repeating decimal expansions.

$$\frac{29}{40}$$

21. Without actually performing long division, state whether the folloiwng rational nmumbers will have a terminating decimal expansion or a non-terminating, repeating decimal expansion.

$$\frac{17}{50}$$

22. Without actually performing long division, state whether the folloiwng rational nmumbers will have a terminating decimal expansion or a non-terminating, repeating decimal expansion.

$$\frac{7}{8}$$

23. Without actually performing long division, state whether the folloiwng rational nmumbers will have a terminating decimal expansion or a non-terminating, repeating decimal expansion.

$$\frac{15}{117}$$

24. Without actually performing long division, state whether the folloiwng rational nmumbers will have a terminating decimal expansion or a non-

terminating, repeating decimal expansion.

$$\frac{2}{15}$$

25. Write the decimal expansion of the following

$$\frac{17}{25}$$

26. Write the decimal expansion of the following

$$\frac{31}{2^2 \times 5^2}$$

27. Write the decimal expansion of the following

$$\frac{643}{3^2 \times 5^2}$$

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28. Write the decimal expansion of the following

$$\frac{134}{110}$$

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29. Prove that the following are irrational. (ii)

$$\sqrt{3} + \sqrt{5}$$

30. Prove that the following are irrational.

$$\sqrt{3}$$

31. Prove that the following are irrational.

$$7 + \sqrt{2}$$

32. Prove that the following are irrational.

$$3\sqrt{2}$$

33. Prove that the following are irrational.

$$3 - \sqrt{5}$$

34. Prove that $\sqrt{a} + \sqrt{b}$ is irrational, where a, b are primes.

35. Write the following using logarithms.

$$4^5 = 1024$$

36. Write the following using logarithms.

$$3^8 = 6561$$

37. Write the following using logarithms.

$$10^4 = 10000$$

38. Write the following using logarithms.

$$10^{-5} = 0.00001$$

39. Write the following using logarithms.

$$m^0 = 1$$

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40. Write the following using logarithms.

$$3^{-2} = \frac{1}{9}$$

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41. Write the following using powers

$$\log_{10} 1000 = 3$$

42. Write the following using powers

$$\log_8 0.125 = -1$$

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43. Write the following using powers

$$\log_{10} 0.01 = -2$$

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44. Write the following using powers

$$\log_{0.5} 16 = -4$$

 Watch Video Solution

45. Write the following using powers

$$\log_5 125 = 3$$

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46. Write the following using powers

$$\log_5 1 = 0$$

47. Determine the value of the following

$\log_8 128$

48. Write the following using powers

$\log_{\frac{1}{2}} 256$

49. Write the following using powers

$$\log_{3\sqrt{3}} 27$$

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50. Write the following using powers

$$\log_6 216$$

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51. Write the following using powers

$$\log_{\frac{1}{2}}\left(\frac{1}{16}\right)$$

52. Write the following using powers

$$\log_3 \left(\frac{1}{9} \right)$$

53. Simplify each of the following expressionsas

logN. Determine the value of N.

3 log 2 -2 log 3

54. Simplify each of the following expressionsas logN. Determine the value of N.

log 5 + log 8 - 2log 2

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55. Simplify each of the following expressionsas logN. Determine the value of N.

log 4 + 2log 3

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56. Simplify each of the following expressionsas logN. Determine the value of N.

2 log 9 - log 18

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57. Simplify each of the following expressionsas logN. Determine the value of N.

2 log x - 3 log y - 4 log z

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58. Simplify each of the following expressionsas

logN. Determine the value of N.

$$2\log\left(\frac{7}{3}\right) + 2\log\left(\frac{3}{5}\right) + 3\log\left(\frac{5}{7}\right)$$

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59. Expand the following

$$\log\left(a^{\frac{3}{4}} \cdot b^5 \cdot c^8\right)$$

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60. Expand the following

$$\log\left(\frac{133}{65}\right)$$

▶ Watch Video Solution

61. Expand the following

$$\log\left(x^3 \frac{y^4}{z}\right)$$

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62. Expand the following

$$\log\sqrt{\frac{p^4}{q^3}}$$

63. Expand the following

log 500

64. $\sqrt{4}$ is

    A. a rational number

    B. an irrational number

    C. an odd number

D. none of these

Answer:

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65. The logarithmic form of $64 = 2^6$ is

A. $\log_2 64 = 6$

B. $\log_6 64 = 2$

C. $\log_{464} = 2$

D. $\log_{364} = 6$

Answer:

66. The exponential form of $\log_4^{1024} = 5$ is

A. $5^4 = 1024$

B. $6^4 = 1024$

C. $4^5 = 1024$

D. $2^8 = 1024$

Answer:

67. If $\log_2 8 = y$ then y=

A. 3

B. 4

C. 6

D. 10

Answer:

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68. $\log_3 729 = x$ అయిన x విలువ

    A. 243

    B. 81

    C. 9

    D. 6

Answer:

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69. $\log 15$ = ...

A. log 1 + log 5

B. log 10 + log 5

C. log 3+ log 5

D. $\log 3 \times \log 5$

Answer:

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70. The product of L.C.M and H.C.F of the least prime and least composite number is

A. 1

B. 3

C. 4

D. 2

Answer:

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71. The L.C.M. of 36 and 54 is

A. 18

B. 108

C. 36

D. 54

Answer:

72. The sum of the exponents of the prime factor in the prime factorisation of 108 is

A. 5

B. 6

C. 4

D. 1

Answer:

73. 1. $\overline{23}$ is

A. a rational number

B. an irrational number

C. an integer

D. a natural number

Answer:

74. The HCF of 6, 72 and 120 is

A. 12

B. 15

C. 6

D. 3

Answer:

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75. The LCM of 8,9 and 25 is

A. 200

B. 1800

C. 225

D. 72

Answer:

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76. The rational number in between $\frac{1}{2}$ and $\sqrt{1}$

is.........

A. $\dfrac{9}{4}$

B. $\dfrac{3}{4}$

C. $\dfrac{5}{4}$

D. $\dfrac{5}{4}$

Answer:

▶ **Watch Video Solution**

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77. Set of Rational and irrational numbers are

called........

A. Real numbers

B. natural numbers

C. Whole numbers

D. Integers

Answer:

78. log form of $3^5 = 243$ is............

A. $\log_3^{243} = 5$

B. $\log_5^{243} = 3$

C. $\log_{243}^3 = 5$

D. $\log_{243}^{5} = 3$

Answer:

79. The symbol of "implies" is........

A. $\Leftrightarrow$

B. $\Rightarrow$

C. $\forall$

D. $\exists$

Answer:

80. The prime factorisation of 729 is...........

A. 3^6

B. 3^5

C. 3^4

D. 3^8

Answer:

81. If 'x' and 'y' are two prime numbers then their HCF is..............

A. 0

B. 1

C. xy

D. x+y

Answer:

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82. $\log_{10} 0.01 =$

A. -1

B. 1

C. -2

D. 2

Answer:

▶ **Watch Video Solution**

83. The number of odd numbers in between '0' and 100 is................

A. 100

B. 51

C. 49

D. 50

Answer:

▶ **Watch Video Solution**

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84. The exponential form of $\log_4^5 = x$ is.....

A. $x^5 = 4$

B. 'x^4= 5'

C. $4^x = 5$

D. $5^x = 4$

Answer:

85. The valiue of $\dfrac{36}{2^3 \times 5^3}$ in decimal form is..........

A. 0.036

B. 0.36

C. 0.0036

D. 3.6

Answer:

86. LCM of two numbers is 108 and their HCF is 9

and one of them is 54, So the second one is..........

A. 9

B. 18

C. 6

D. 12

Answer:

87. The number of prime factors of 36 is

A. 4

B. 3

C. 2

D. 1

Answer:

88. The exponential form of $\log_{10} 0.001 = -3$ is............

A. $(0.001)^{10} = -3$

B. $(-3)^{10} = 0.001$

C. $10^3 = -0.001$

D. $10^{-3} = 0.001$

Answer:

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89. Which of the following is not a rational number?

    A. $\log_{10}^{3}$

    B. $5.\overline{23}$

    C. 123.123

    D. $\dfrac{10}{19}$

Answer:

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90. LCM of 24 and 36 is...........

A. 24

B. 36

C. 72

D. 864

Answer:

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91. H.C.F. of 324 and 360 is.....

A. 9

B. 1

C. 63

D. 36

Answer:

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92. $\log_X \sqrt[3]{X} = ...$

A. 3

B. $\dfrac{1}{3}$

C. $0.\bar{3}$

D. B and C

Answer:

93. $\log_4 8^2 =.....$

A. 4

B. 8

C. 2

D. 3

Answer:

94. Last digit of 5^{100} is......

A. 5

B. 6

C. 0

D. Cannot say

Answer:

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95. $\log_{10} 0$ వ్యవస్థితం అవుతుందా?

A. deos not exist

B. 1

C. 0

D. exist

Answer:

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96. If $\log 2 = 0.30103$, then $\log 32 = \ldots$

A. 4.81648

B. 1.50515

C. 9.63296

D. 9.0309

Answer:

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97. If $\log_{10} 0.00001 - x$, then $x = $ . . . . . .

A. 4

B. -4

C. 5

D. -5

Answer:

98. If $\log_a a^{x^2 + 5x + 8} = 2$, then $x = \ldots\ldots\ldots$

A. 2 or 3

B. 5 or 7

C. -2 and -3

D. 8 or -2

Answer:

99. $\log_3 x^2 = 2$ then $x = \ldots\ldots$

A. 2

B. -2

C. 3

D. -3

Answer:

100. $\log_9 \sqrt{3\sqrt{3\sqrt{3}}} =$

A. $\dfrac{7}{8}$

B. $\dfrac{7}{16}$

C. $\dfrac{1}{16}$

D. $\dfrac{1}{8}$

Answer:

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101. $\log_8 128 =$

   A. $7/3$

   B. 16

   C. 2048

   D. 136

Answer:

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102. Which of the following is an irrational number?

A. $\sqrt{123}$

B. $\sqrt{322}$

C. $\sqrt{35 + 14}$

D. $\sqrt{25 + 16}$

Answer:

▶ **Watch Video Solution**

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103. The prime facrorization of 144 is

A. $4^2 \times 3^2$

B. $2^7 \times 3^4$

C. 12×12

D. $2^4 \times 3^2$

Answer:

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104. L.C.M of the numbers

$2^7 \times 3^4 \times 7$ and $2^3 \times 3^4 \times 11$ is

A. $2^3 \times 3^4$

B. $2^7 \times 3^4$

C. $2^7 \times 3^4 \times 7 \times 11$

D. $2^3 \times 3^4 \times 7 \times 11$

Answer:

---

105. The H.C.F of the number $3^7 \times 5^3 \times 2^4$ and $3^2 \times 7^4 \times 2^8$ is

A. $2^4 \times 3^2$

B. $2^8 \times 3^7 \times 5^3 \times 7^4$

C. $2^8 \times 3^7$

D. $2 \times 3 \times 5 \times 7$

Answer:

106. The decimal expansion of 0.225 in its rational

form is

    A. 225

    B. $\dfrac{225}{10^4}$

    C. $\dfrac{225}{10^2}$

    D. $\dfrac{9}{40}$

Answer:

107. Which of the following is a rational number?

A. $\sqrt{3}$

B. $\sqrt{5}$

C. $\sqrt{7}$

D. $\sqrt{9}$

Answer:

108. What is the L.C.M of greatest 2 digit number and the greatest 3 digit number?

    A. 99xx999

    B. 999

    C. 99xx9xx111

    D. 9xx11xx111

Answer:

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109. What is the H.C.F of n and $n + 1$ where n is a natural number?

A. n

B. n+1

C. $n/2$

D. 1

Answer:

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110. What is the L.C.M of least prime and the least composite number?

A. least prime x least composite

B. 2

C. least composite

D. 6

Answer:

▶ Watch Video Solution

111. The product of L.C.M and H.C.F of the least prime and least composite number is

A. 4

B. 6

C. 8

D. 16

Answer:

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112. $n^2 - 1$ is divisible by 8, if n is

A. an odd number

B. an even number

C. prime number

D. integer

Answer:

 Watch Video Solution

113. If x and y are any two co-prime, then their L.C.M.

is

A. x+y

B. x.y

C. x/y

D. x=y

Answer:

▶ **Watch Video Solution**

114. If x and y are any two relative prime numbers, then their H.C.f is

A. x.y

B. x.y

C. y

D. 1

Answer:

▶ **Watch Video Solution**

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115. If m and n are co-primes, then H.C.F of m^2 and n^2 is

A. m

B. n^2

C. m^2

D. 1

Answer:

116. If n is a natural number, then which of the following expression ends in zero?

A. $(3 \times 2)^n$

B. $(5 \times 7)^n$

C. $(9 \times 3)^n$

D. $(2 \times 5)^n$

Answer:

---

117. The number of prime factors of 72 is

A. 12

B. 2

C. 3

D. 6

Answer:

118. How many prime factors are there in the prime factorization of 240?

A. 20

B. 5

C. 3

D. 6

Answer:

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119. After how many digits will the decimal expansion of $11/32$ terminates?

A. 5

B. 4

C. 3

D. Never

Answer:

▶ Watch Video Solution

120. p,q are co-primes and $q = 2^n.5^m$ where m>n , then the decimal expansion of p/q terminates after ....places.

A. m

B. n

C. m.n

D. m+n

Answer:

121. The decimal expansion of $\dfrac{9}{17}$ is

    A. terminating

    B. non-terminating & non-repeating

    C. non-terminating ^ repeating

    D. none

Answer:

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122. $5.67891\overline{1}$ is a...... number.

A. prime

B. composite

C. irrational

D. rational

Answer:

▶ **Watch Video Solution**

123. 0.12   112   1112   11112. . . . . .. is   ....

Number

A. irrational

B. composite

C. irrational

D. rational

Answer:

124. $\dfrac{1}{\sqrt{2}}$ is......number.

A. irrational

B. rational

C. composite

D. prime

Answer:

▶ **Watch Video Solution**

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125. $3 \times 5 \times 7 \times 11 + 35$ is .... Number.

A. natural

B. rational

C. whole

D. an irrational

Answer:

126. The decimal expansion of $\dfrac{209}{80}$ terminates after...... places.

A. 5

B. 6

C. 4

D. 9

Answer:

127. $7 \times 11 \times 17 + 34$ is divisible by..........

    A. 7 or 10

    B. 7 or 19

    C. 17 or 79

    D. 8 or 231

Answer:

128. $\dfrac{73}{625}$ has.......... decimal expansion.

A. Non-terminal

B. Terminal

C. Non-terminating, repeating

D. None

Answer:

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129. The number of prime factors of 1024 is.......

A. 12

B. 9

C. 7

D. 1

Answer:

130. The decimal expansion of $\dfrac{101}{99}$ is.......

A. $1.\overline{02}$

B. $1.\overline{07}$

C. $1.\overline{39}$

D. 1. $\overline{14}$

Answer:

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131. The period of the decimal expansion of $\dfrac{19}{21}$ is........

A. 917461

B. 904761

C. 940761

D. None

Answer:

132. If a rational number p/q has a terminating decimal, then the prime factorisation of q is of the form..........

A. $3^m 5^n$

B. 3^m

C. $3^m 5^n 3^p$

D. $2^m 5^n$

Answer:

133. The prime factorisation of 20677 is................

A. $13 \times 29 \times 71$

B. $23 \times 29 \times 31$

C. $19 \times 23 \times 17$

D. None

Answer:

134. The LCM of 208 and 209 is............

A. 208×109

B. 19×218

C. 104×20

D. 208×209

Answer:

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135. The HCF of 1001 and 1002 is.......

A. 1

B. 7

C. 9

D. 11

Answer:

▶ Watch Video Solution

136. If $P_1, P_2, P_3, \ldots, P_n$ are co-primes then their LCM is........

A. $p_3 p_5 p_7$

B. $p_6 p_7 \ldots p_n$

C. $p_1 p_2 \ldots p_n$

D. $p_2 p_4 \ldots p_n$

Answer:

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137. The decimal expansion of $\dfrac{7}{16}$ without actual division is.......

A. 0.4375

B. 4.375

C. 43.75

D. 0.0004375

Answer:

▶ **Watch Video Solution**

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138. The expansion of $\dfrac{87}{625}$ terminating after.....

Places.

A. 6

B. 4

C. 14

D. 9

Answer:

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139. The expansion of $\dfrac{123}{125}$ terminates after.........

places.

A. 9

B. 7

C. 3

D. None

Answer:

140. The decimal form of $\dfrac{80}{81}$ repeats after........places.

A. 16

B. 12

C. 7

D. None

Answer:

---

141. $\dfrac{70}{71}$ is a..........decimal.

A. terminating

B. non-terminating

C. Non-terminatin repeating

D. none

Answer:

142. $\frac{123}{125}$ is a.........decimal.

A. terminating

B. non-terminating

C. non-terminating, repeating

D. none

Answer:

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143. 14.381 may certain the denominator when expressed in p/q form is...........

    A. $8^3 \times 6^3$

    B. $12^3 \times 4^3$

    C. $2^3 \times 5^3$

    D. $7^3 \times 8^3$

Answer:

144. $5\sqrt{5} + 6\sqrt{5} - 2\sqrt{5} = \ldots \ldots$

A. $6\sqrt{5}$

B. $7\sqrt{5}$

C. $2\sqrt{5}$

D. $9\sqrt{5}$

Answer:

▶ **Watch Video Solution**

145. $9\sqrt{2} \times \sqrt{2} = \ldots\ldots\ldots$

A. 16

B. 18

C. 19

D. 20

Answer:

▶ **Watch Video Solution**

146. $\log_{10} 10 = \ldots.$

A. 0

B. -1

C. 1

D. 7

Answer:

---

147. $\log_a\left(\dfrac{1}{a}\right) =$

    A. 4

    B. 3

    C. -1

    D. 12

Answer:

148. $\log_b a \cdot \log_a b = \ldots\ldots\ldots$

A. 7

B. 3

C. 4

D. 1

Answer:

149. $\log_1 1 = \ldots$

    A. 1

    B. -1

    C. 0

    D. not defined

Answer:

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150. $\log_{0.1} 0.01 = \ldots\ldots\ldots\ldots\ldots$

A. 8

B. 6

C. 9

D. None

Answer:

▶ **Watch Video Solution**

151. $\log 2 + \log 5 = $ ....

A. 1

B. 2

C. 9

D. 12

Answer:

152. $16 \times 64 = 4^k$ then $k = \ldots\ldots\ldots\ldots$

A. 9

B. 12

C. 5

D. 19

Answer:

153. $a + b = b + a$ is called.........property.

A. Associative

B. Identity

C. Inverse

D. commulative

Answer:

154. $\log_5 125 = \ldots\ldots\ldots$

A. 5

B. 3

C. 15

D. 12

Answer:

155. Exponential form of $\log_4 64 = 3$ is..........

A. $4^3 = 64$

B. $3^4 = 64$

C. $4^2 = 81$

D. None

Answer:

▶ Watch Video Solution

156. $\log 15$ = ...

A. log 5+ log 10

B. log 3+ log 12

C. log 5 + log 3

D. all the above

Answer:

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157. $\dfrac{1}{\sqrt{2}}$ is......number.

A. rational

B. an irrational

C. natural

D. whole

Answer:

▶ **Watch Video Solution**

158. $Q \cup Q^c$ = ...

A. P

B. C

C. R

D. None

Answer:

159. .... is called the additive identity.

A. 0

B. 1

C. 2

D. None

Answer:

160. $\sqrt{2} = 1.414$ then $3\sqrt{2} = \ldots\ldots\ldots$

A. 2.42

B. 13.42

C. 42.42

D. 4.242

Answer:

▶ Watch Video Solution

161. Without performing division, state whether the following rational numbers will have a terminating decimal form or a non-terminating, repeating decimal form. (vi) $\dfrac{23}{2^3 \times 5^2}$

A. 11.5

B. 0.115

C. 1.15

D. 115.1

Answer:

162. 0.9375= ....

A. $\dfrac{15}{16}$

B. $\dfrac{5}{16}$

C. $\dfrac{16}{15}$

D. $\dfrac{18}{1199}$

Answer:

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163. $4\dfrac{1}{5} = \ldots\ldots\ldots\ldots$

A. 4.12

B. 4.2

C. 0.42

D. 4.02

Answer:

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164. $\dfrac{5}{11} = \ldots\ldots\ldots\ldots$

A. $0.\overline{43}$

B. $0.\overline{44}$

C. 0. $\overline{31}$

D. 0. $\overline{45}$

Answer:

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165. LCM of 12, 15 and 21 is..........

A. 420

B. 440

C. 820

D. 110

Answer:

---

166. 0.4=......

A. $\dfrac{2}{5}$

B. $\dfrac{5}{2}$

C. $\dfrac{1}{9}$

D. None

Answer:

167. $\sqrt{\dfrac{4}{9}} = \ldots\ldots\ldots\ldots$

A. $\dfrac{3}{2}$

B. $\dfrac{2}{3}$

C. $\dfrac{\sqrt{2}}{3}$

D. $\dfrac{2}{\sqrt{3}}$

Answer:

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168. HCF of 12, 18 is..............

    A. 12

    B. 9

    C. 2

    D. 6

Answer:

▶ **Watch Video Solution**

169. $2^2 \times 5 \times 7 = \ldots\ldots\ldots$

A. 240

B. 144

C. 140

D. 909

Answer:

▶ **Watch Video Solution**

170. $\log_a 1 =$

A. a^2

B. 2

C. 1

D. 0

Answer:

▶ **Watch Video Solution**

---

171. $\log_{2015} 2015 = \ldots\ldots\ldots\ldots$

A. 15

B. 1

C. 5

D. 0

Answer:

172. Multiplicative inverse of $3\frac{1}{3}$ is......

A. $3\frac{1}{3}$

B. $\frac{3}{13}$

C. $\frac{3}{10}$

D. $\frac{3}{14}$

Answer:

173. $(ab)c = a(bc)$ is called...... property.

A. Associative

B. Inverse

C. Identity

D. None

Answer:

174. $\dfrac{41}{75} = \ldots\ldots\ldots$

A. $\dfrac{42}{35^2}$

B. $\dfrac{41}{3^2 5^2}$

C. $\dfrac{1}{35^2}$

D. None

Answer:

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175. $\log 64 - \log 4 = \ldots\ldots$

A. 4

B. 7

C. 1

D. None

Answer:

▶ **Watch Video Solution**

176. LCM of 306 and 657 is........

A. 22338

B. 23238

C. 11128

D. None

Answer:

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177. $\dfrac{1167}{50} = \ldots\ldots\ldots\ldots$

A. 1.675

B. 23.34

C. 81.45

D. None

Answer:

---

178. 6^n can not end with..........

A. 6

B. 0

C. 2

D. None

Answer:

179. $\sqrt{2025} = \ldots\ldots\ldots$

A. 405

B. 54

C. 45

D. 55

Answer:

▶ Watch Video Solution

180. 5^5 = ...

    A. 1325

    B. 1125

    C. 3125

    D. 1859

Answer:

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181. $\dfrac{3}{8}$ is................

A. 0.375

B. 3.75

C. 8.175

D. None

Answer:

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182. $\sqrt{5} = \ldots\ldots\ldots$

A. 1.414

B. 2.236

C. 1.73

D. 2.998

Answer:

183. $\log_2 16 = \ldots\ldots\ldots\ldots$

A. 2

B. 8

C. 4

D. 12

Answer:

184. $2 \log 3 + 3 \log 5 - 5 \log 2 =$ ....

A. $\log \left(\dfrac{1125}{32} \right)$

B. $\log \left(\dfrac{125}{23} \right)$

C. $\log \left(\dfrac{1025}{16} \right)$

D. None

Answer:

185. $\log_2 1024 = \ldots\ldots\ldots$

A. 16

B. 20

C. 19

D. 10

Answer:

▶ Watch Video Solution

186. $\log_{18} 324 = \ldots\ldots$

A. 2

B. 16

C. 19

D. 12

Answer:

▶ Watch Video Solution

187. $\log_3 \dfrac{1}{27} = \ldots\ldots$

A. 3

B. 6

C. -3

D. -7

Answer:

▶ **Watch Video Solution**

188. $\log_6 1 = \ldots .$

A. 12

B. 19

C. 7

D. 0

Answer:

▶ **Watch Video Solution**

189. $128 \div 32 = \ldots$

A. 9

B. 6

C. 4

D. None

Answer:

190. కింది వాటిని ఘతరూపంలో వ్రాసి తద్వారా చారరాశులను నిర్ణయించండి. $\log_{10} 10000 = z$

A. 4

B. 3

C. 2

D. None

Answer:

191. $\log_{27} 9$ =

A. $\dfrac{3}{2}$

B. $\dfrac{2}{3}$

C. 1

D. $\dfrac{1}{2}$

Answer:

192. $\log_7 \sqrt{49} = ...$

A. 1

B. 10

C. 11

D. 12

Answer:

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193. Expand form of log 1000 is

A. 3 log 2+ 3 log 5

B. 2 log 2 + log 5

C. log2-log 5

D. None

Answer:

194. $\dfrac{3}{2}(\log x) - (\log y)$ =..........

A. $\dfrac{\log \sqrt{x}^3}{y^2}$

B. $\log \sqrt{\dfrac{x^3}{y^2}}$

C. $\log\left(\dfrac{x^3}{y^2}\right)$

D. None

Answer:

▶ **Watch Video Solution**

---

195. $\dfrac{13}{4} = \ldots\ldots\ldots$

A. 3.1251

B. 1.15

C. 3.25

D. None

Answer:

196. $\left(\sqrt{7} + \sqrt{5}\right)\left(\sqrt{7} - \sqrt{5}\right) = $ ....

A. 12

B. 10

C. 9

D. 2

Answer:

197. $2\sqrt{3} + 7\sqrt{3} + \sqrt{3} = \ldots\ldots\ldots\ldots$

A. $110\sqrt{3}$

B. $7\sqrt{3}$

C. $9\sqrt{3}$

D. $10\sqrt{3}$

Answer:

▶ **Watch Video Solution**

198. $\log_2 512 = \ldots\ldots\ldots$

A. 9

B. 10

C. 3

D. 12

Answer:

▶ **Watch Video Solution**

199. Logarithmic form of $a^x = b$ is..........

A. $\log_b x = a$

B. $\log_x b = a$

C. $\log_b a = x$

D. $\log_a b = x$

Answer:

▶ Watch Video Solution

200. $10^4 = \ldots\ldots\ldots$

A. 10009

B. 10090

C. 10000

D. None

Answer:

201. .... has no multiplication inverse.

A. $\dfrac{9}{7}$

B. $\dfrac{2}{3}$

C. $\dfrac{9}{14}$

D. 0

Answer:

202. $\left|-203\right| = \ldots\ldots\ldots$

A. 101

B. -203

C. 302

D. 203

Answer:

203. Write the following using powers

$$\log_3\left(\frac{1}{9}\right)$$

A. 6

B. 4

C. 2

D. None

Answer:

▶ **Watch Video Solution**

204. HCF of 1 and 143=..........`

A. 1

B. 43

C. 34

D. 10

Answer:

205. $a(b + c) = $ ....

A. ab+c

B. bc+d

C. ab+ac

D. a+bc

Answer:

▶ **Watch Video Solution**

206. $a + (- a) = (- a) + a$ is called..............

A. Inverse

B. Identity

C. Commutative

D. None

Answer:

▶ Watch Video Solution

---

207. $\log_{32} \dfrac{1}{4} = \ldots\ldots\ldots$

A. $\dfrac{1}{4}$

B. $\dfrac{1}{2}$

C. $-\dfrac{5}{2}$

D. $-\dfrac{2}{5}$

Answer:

208. $\log_{10} 10 = \ldots$

A. 2

B. 6

C. 0.1

D. None

Answer:

209. $\sqrt{12544} = \ldots\ldots\ldots\ldots$

A. 161

B. 122

C. 112

D. 113

Answer:

210. $\sqrt{a}\sqrt{b}=....$

A. ab

B. $b\sqrt{a}$

C. $a\sqrt{b}$

D. $\sqrt{ab}$

Answer:

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211. Which of the following is a correct one?

A. $N \subset Z \subset W$

B. $N \subset W \subset Z$

C. $R \subset N \subset W$

D. all the above

Answer:

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212. $\log_x \left(\dfrac{a}{b} \right) = \dots$

A. $\log_x a - \log_x b$

B. $\log_x a + \log_x b$

C. log (ab)

D. None

Answer:

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213. Use Euclids division algorithm to find the HCF of

800 and 34960.

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214. Find the LCM and HCF of the following integers by the prime factorization method.

20, 35 and 45

215. Find the LCM and HCF of the following integers by the prime factorization method.

13, 19 and 29

216. Find the LCM and HCF of the following integers by the prime factorization method.

168 and 216

217. Find the LCM and HCF of the following integers by the prime factorization method.

468 and 612

218. Write the following rational numebr in their decimal form and also state which are terminating and which have non-terminating, a repeating decimal.

$\dfrac{7}{8}$

219. Write the following rational numers in their decimal form and also state which are terminating and which have non-terminating, a repeating decimal.

$\dfrac{13}{200}$

220. Write the following rational numers in their decimal form and also state which are terminating and which have non-terminating, a repeating decimal.

$$\frac{31}{125}$$

221. Write the following rational numers in their decimal form and also state which are terminating and which have non-terminating, a repeating

decimal.

$$\frac{5}{11}$$

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222. Expand the following

log 500

▶ **Watch Video Solution**

223. Expand the following

$$\log\left(\frac{216}{125}\right)$$

▶ **Watch Video Solution**

224. Expand the following

$$\log\left(x^2 y^4 z^3\right)$$

▶ Watch Video Solution

225. Expand the following

$$\log\left(\frac{p^2 q^3}{r^2}\right)$$

▶ Watch Video Solution

226. Expand the following

$$\log \sqrt{\dfrac{x^5}{y^3}}$$

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227. Prove that $\sqrt{a} - \sqrt{b}$ irrational where a,b are primes.

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228. which of the following rational number is terminating?

A. $\dfrac{2}{3}$

B. $\dfrac{8}{9}$

C. $\dfrac{3}{8}$

D. $\dfrac{1}{7}$

Answer:

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229. After how many digits will the decimal expansion of $\dfrac{3}{4}$ come to an end?

A. 1

B. 2

C. 3

D. 4

Answer:

230. The number of digit in the fractional part of the decimal form of $\dfrac{7}{40}$ is

A. 1

B. 1

C. 2

D. 3

Answer:

231. The decimal expansion of $\dfrac{19}{8}$ is

A. 2.375

B. 2.225

C. 2.125

D. 2.75

Answer:

232. Which of the following is irrational?

A. $\sqrt{4}$

B. $\sqrt{3}$

C. $\sqrt{15}$

D. $\sqrt{1}$

Answer:

233. The prime factorisation of 216 is

A. $2^2 \times 3^2$

B. $2^3 \times 3^2$

C. $2^3 \times 3^3$

D. $2^4 \times 3$

Answer:

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234. 0.00025=...

    A. $\dfrac{25}{10^4}$

    B. $\dfrac{25}{10^5}$

    C. $\dfrac{25}{10^3}$

    D. $\dfrac{25}{10^6}$

Answer:

▶ **Watch Video Solution**

235. 0.0875=....

A. $\dfrac{7}{2^4 \times 5}$

B. $\dfrac{7}{2^3 \times 5^2}$

C. $\dfrac{8}{2^4 \times 5}$

D. $\dfrac{8}{2^3 \times 5^2}$

Answer:

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236. $\dfrac{7}{25}$ can be written as

A. $\dfrac{7}{5^2 \times 2^2}$

B. $\dfrac{28}{5^2 \times 2^2}$

C. $\dfrac{14}{8^2 \times 2^2}$

D. $\dfrac{7}{5 \times 2}$

Answer:

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237. $\sqrt{5}$ is

A. a rational number

B. an irrational number

C. an integer

D. a natural number

Answer:

▶ **Watch Video Solution**

238. 0.3030030003... is an .... Number.

A. natural

B. irrational

C. rational

D. none

Answer:

▶ **Watch Video Solution**

239. $743.211111\ldots\ldots\ldots$ is......... number.

A. whole

B. irrational

C. rational

D. none

Answer:

▶ Watch Video Solution

240. The logarithmic form of $12^2 = 144$ is............

A. $\log_{144} 12 = 2$

B. $\log_{12} 144 = 2$

C. $\log_{12} 14 = 2$

D. $\log_7 14 =$

Answer:

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241. $\log \dfrac{125}{16} = $ ....

A. 3 log5- log4

B. log5-log3

C. 3 log 5-log2

D. 3log5- 4 log 2

Answer:

242. $\log \dfrac{x^2 y^3 z^4}{w^5}$ in the expanded form is.............

A. 2 log x + 3 log y + 4 log z- 5log w

B. log x+ log y + 4 log z- 5 log w

C. 2 log x-3logy-4 log z - 5 log w

D. None

Answer:

243. Logarithmic form of $19^2 = 361$ is........

A. $\log_{361} 19 = 2$

B. $\log_{19} 361 = 2$

C. $\log_{19}(36)$

D. None

Answer:

---

244. $\log 81 \times 25 = \ldots\ldots\ldots$

    A. log3+log 5

    B. 3 log3 + 5 log 5

    C. log 3 + 5 log 5

    D. 4 log 3+ 2log 5

Answer:

245. $\dfrac{13}{125}$ is ………. decimal.

A. terminating

B. non-terminating

C. non-terminating,repeating

D. none

Answer:

▶ **Watch Video Solution**

246. $\dfrac{28}{82}$ is.....decimal.

A. non-terminating, repeating

B. terminating

C. non-terminating

D. none

Answer:

▶ Watch Video Solution

247. $\sqrt{5} + \sqrt{7}$ is........ Number.

A. natural

B. whole

C. interger

D. an irrational

Answer:

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248. Use Euclid's division algorithm to find the HCF of (i) 900 and 270

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249. Show that HCF of numbers 900 and 270 follows Euclid's division algorithm.

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250. How will you show that $(17 \times 11 \times 2) + (17 \times 11 \times 5)$ is a composite numbers ? Explain.

▶ **Watch Video Solution**

251. Prove that $\sqrt{p} + \sqrt{q}$ is an irrational, where p,q are primes.

▶ **Watch Video Solution**

252. Write the following relation in exponential form of $\log_5^4 = x$

▶ **Watch Video Solution**

253. Write the following relation in exponential form of $\log_5^4 = x$

254. Write the following relation in exponential form of $\log_5^4 = x$

255. Write the following relation in exponential form of $\log_5^4 = x$

1. The decimal expansion of $\dfrac{27}{14}$ is

A. $1.\overline{9285714}$

B. 1.9285714

C. 1.9285714

D. $0.1\overline{9285714}$

Answer:

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