7

Exponents And Powers

7th Standard

Mathematics

Exam Time : 00:01:00 Hrs

Total Marks : 1

105 x 1 = 105

1) For any two non-zero rational numbers x and y, $x^5 \div y^5$ is equal to.

(a) $(x \div y)^1$ (b) $(x \div y)^0$ (c) $(x \div y)^5$ (d) $(x \div y)^{10}$

2) The value of $\frac{10^{22}+10^{20}}{10^{20}}$ is

(a) 10 (b) 10^{42} (c) 101 (d) 10^{22}

3) $\left(\frac{2}{3}\right)^3 \times \left(\frac{5}{7}\right)^3$ is equal to

(a) $\left(\frac{10}{21}\right)^9$ (b) $\left(\frac{10}{21}\right)^6$ (c) $\left(\frac{10}{21}\right)^3$ (d) $\left(\frac{10}{21}\right)^0$

4) The reciprocal of $\left(\frac{-2}{5}\right)^2$ is

(a) $\left(\frac{-5}{2}\right)^2$ (b) $\left(\frac{5}{2}\right)^2$ (c) $\frac{4}{25}$ (d) $\frac{25}{4}$

5) $(-4)^4 \times (-2)^0 \times (-1)^{202}$ is equal to

(a) 64 (b) 1 (c) 0 (d) 256

6) $\left[\left\{\left(\frac{2}{-9}\right)^2\right\}^0\right]^2$ is equal to

(a) 2 (b) $\frac{4}{81}$ (c) $\frac{81}{4}$ (d) 1

7) If $\left(\frac{5}{3}\right)^5 \times \left(\frac{5}{3}\right)^{11} = \left(\frac{5}{3}\right)^{8x}$, then the value of x is

(a) 3 (b) $\frac{1}{2}$ (c) 1 (d) 2

8) $(5^7 \div 5^2) \times (3^6 \div 3^2)$ is equal to

(a) 1426 (b) 1242 (c) 253125 (d) 101962

9) If $\frac{p}{q} = \left(\frac{5}{6}\right)^2 \div \left(\frac{5}{6}\right)^0$, then the value of $\left(\frac{p}{q}\right)^2$ is

(a) $\frac{125}{1290}$ (b) $\frac{625}{1296}$ (c) $\frac{164}{125}$ (d) $\frac{169}{144}$.

10) If $(3^{102} \times 3^{101}) \div 3^{101} = k - 3^{100}$, then the value of k

(a) 9 (b) 10 (c) 11 (d) 12

11) If $\frac{a}{b} = \left(\frac{625}{81}\right) \div \left(\frac{5^4}{3^4}\right)$, then the value of $\left(\frac{a}{b}\right)^5$ is

(a) $\left(\frac{5}{3}\right)^8$ (b) $\left(\frac{3}{5}\right)^8$ (c) 1 (d) $\frac{3}{5}$

12) The number corresponding to expanded form, $6 \times 10^8 + 3 \times 10^7 + 4 \times 10^5 + 3 \times 10^2 + 1 \times 10^0$ is

(a) 63040301 (b) 63040031 (c) 630400301 (d) 63400301

13) Standard form corresponding to the number 654300100 is

(a) 6.543001×10^7 (b) 6.543001×10^8 (c) 6.543×10^8 (d) 6.543001×10^9

14) 72 can be expressed as

(a) $2^3 \times 3^2$ (b) $2^2 \times 3^2$ (c) $2^3 \times 3^3$ (d) $2^2 \times 3^2$

15) Value of $(-2)^3 \times (-10)^3$ is

(a) 8,000 (b) 9,000 (c) -8,000 (d) 12,000

16) Which of the following is the exponential form of '243' ?

(a) 3^2 (b) 2^3 (c) 3^5 (d) 5^3

17) Which of the following is the simplest form of $(-3)^2 \times (-4)^3$?

(a) 576 (b) -576 (c) -64 (d) -36

18) Which of the following is the simplest form of $[(2)^{20} \div (2)^{18}] \times 2^3$?

(a) 8 (b) -8 (c) -32 (d) 32

19) Which of the following is the standard form of 12700?

(a) 1.27×10^4 (b) 12.7×10^4 (c) 1.27×10^2 (d) 1270×10

20) Which of the following is the simplest form of $9 \times 10^3 + 2 \times 10^2$?

(a) 9000 (b) 9002 (c) 9200 (d) 209

21) Which of the following is the value of $(-1)^{100} \div (-1)^{-100}$?

(a) 20000 (b) -1 (c) 1 (d) 2

22) Out of the following, the number which is not equal to $\frac{-8}{27}$ is:

(a) $\left(\frac{2}{3}\right)^3$ (b) $\left(\frac{-2}{3}\right)^3$ (c) $\left(\frac{-2}{3}\right)^3$ (d) $\left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right) \times \left(\frac{-2}{3}\right)$

23) Example 2 : $(-7)^5 \times (-7)^3$ is equal to

(a) $(-7)^8$ (b) $-(7)^8$ (c) $(-7)^{15}$ (d) $(-7)^2$

24) For any two non-zero integers x any y, $x^3 \div y^3$ is equal to

(a) $\frac{x^0}{y}$ (b) $\left(\frac{x}{y}\right)^3$ (c) $\frac{x^6}{y}$ (d) $\frac{x^9}{y}$

25) $[(-3)^2]^3$ is equal to :

(a) $(-3)^8$ (b) $(-3)^6$ (c) $(-3)^5$ (d) $(-3)^{23}$

26) For a non-zero rational number x, $x^8 \div x^2$ is equal to

(a) x^4 (b) x^6 (c) x^{10} (d) x^{16}

27) x is a non-zero rational number. Product of the square of x with the cube of x is equal to the :

(a) second power of x (b) third power of x (c) fifth power of x (d) sixth power of x

28) For an!, two non-zero rational numbers x and y, $x^5 \div y^5$ is equal to :

(a) $(x \div y)^1$ (b) $(x \div y)^0$ (c) $(x \div y)^5$ (d) $(x \div y)^{10}$

29) $a^m \times a^n$ is equal to

(a) $(a^2)^{mn}$ (b) a^{m-n} (c) a^{m+n} (d) a^{mn}

30) $(1^0 + 2^0 + 3^0)$ is equal to

(a) 0 (b) 1 (c) 3 (d) 6

31) Value of $\frac{10^{22}+10^{20}}{10^{20}}$ is

(a) 10 (b) 10^{42} (c) 101 (d) 10^{22}

32) The standard form of the number 12345 is

(a) 1234.5×10^1 (b) 123.45×10^2 (c) 12.345×10^3 (d) 1.2345×10^4

33) if $2^{1998} - 2^{1997} - 2^{1996} + 2^{1995} = K.2^{1995}$, then the value of K is:

(a) 1 (b) 2 (c) 3 (d) 4

34) Which of the following is equal to 1?

(a) $2^0+3^0+4^0$ (b) $2^0 \times 3^0 \times 4^0$ (c) $(3^0-2^0) \times 4^0$ (d) $(3^0-2^0) \times (3^0 + 2^0)$

35) In standard form, the number 72105.4 is written as 7.21054×10^n where n is equal to:

(a) 2 (b) 3 (c) 4 (d) 5

36) Square of $\left(\frac{-2}{3}\right)$

(a) $\frac{-2}{3}$ (b) $\frac{2}{3}$ (c) $\frac{-4}{9}$ (d) $\frac{4}{9}$

37) Cube of $\left(\frac{-1}{4}\right)$ is

(a) $\frac{-1}{12}$ (b) $\frac{1}{16}$ (c) $\frac{-1}{64}$ (d) $\frac{1}{64}$

38) Which of the following is not equal to $\left(\frac{-5}{4}\right)^4$

(a) $\frac{(-5)^4}{4^4}$ (b) $\frac{5^4}{(-4)^4}$ (c) $\frac{5^4}{4^4}$ (d) $\left(-\frac{5}{4}\right) \times \left(-\frac{5}{4}\right) \times \left(-\frac{5}{4}\right) \times \left(-\frac{5}{4}\right)$

39) Which of the following is not equal to 1?

(a) $\frac{2^2 \times 3^2}{4 \times 18}$ (b) $\left[(-2)^3 \times (-2)^4 \div (-2)^7\right]$ (c) $\frac{3^0 \times 5^3}{5 \times 25}$ (d) $\frac{2^4}{(7^0+3^0)^3}$

40) $\left(\frac{2}{3}\right)^3 \times \left(\frac{5}{7}\right)^3$ is equal to:

(a) $\left(\frac{2}{3} \times \frac{5}{7}\right)^9$ (b) $\left(\frac{2}{3} \times \frac{5}{7}\right)^6$ (c) $\left(\frac{2}{3} \times \frac{5}{7}\right)^3$ (d) $\left(\frac{2}{3} \times \frac{5}{7}\right)^0$

41) In standard form, the number 829030000 is written as K x 10^8 where K is equal to :

(a) 82903 (b) 829.03 (c) 82.903 (d) 8.2903

42) Which of the following has the largest value?

(a) 0.0001 (b) $\frac{1}{1000}$ (c) $\frac{1}{10^6}$ (d) $\frac{1}{10^6} \div 0.1$

43) In standard form 72 crore is written as

(a) 72 x 10^7 (b) 72 x 10^8 (c) 7.2 x10^8 (d) 7.2 x10^7

44) For non-zero numbers a and b. $\left(\frac{a}{b}\right)^m \div \left(\frac{a}{b}\right)^{m-n}$ when m > n, is equal to

(a) $\left(\frac{a}{b}\right)^{mn}$ (b) $\left(\frac{a}{b}\right)^{m+n}$ (c) $\left(\frac{a}{b}\right)^{m-n}$ (d) $\left(\left(\frac{a}{b}\right)^m\right)^n$

45) Which of the following is not true?

(a) 3^2 x 2^3 (b) $4^3 = 2^6$ (c) $3^3 = 9$ (d) $2^5 > 5^2$

46) Which power of 8 is equal to 2^6 ?

(a) 3 (b) 2 (c) 1 (d) 4

47) The value of $(\frac{3}{4})^o$is:

(a) 0 (b) 1 (c) -1 (d) none of these

48) The value of $(-1)^2$ is:

(a) 0 (b) -1 (c) 1 (d) none of these

49) The value of $(-1)^3$ is:

(a) 0 (b) 1 (c) -1 (d) none of these

50) The value of $(-1)^\circ$ is:

(a) 0 (b) 1 (c) -1 (d) none of these

51) The value of $(100)^{\circ}$ is:

(a) 0 (b) -1 (c) 1 (d) none of these

52) If 'x ' is a rational number and 'a' and 'b' are whole numbers, then the value of $x^a \cdot x^b$ is:

(a) x^{a+b} (b) x^{a-b} (c) x^{ab} (d) $x^{a/b}$

53) If 'x' is a rational number, 'a' and 'b' (a > b) are whole numbers, then the value of $x^a + x^b$ is:

(a) x^{a+b} (b) x^{a-b} (c) x^{ab} (d) $x^{a/b}$

54) If 'x ' is a rational number and 'a' and 'b' are whole numbers, then the value of $(X^a)^b$is:

(a) x^{a+b} (b) x^{a-b} (c) x^{ab} (d) $x^{a/b}$

55) If 'a' and 'b' are rational numbers and 'm' is a whole number, then the value of a^m x b^m is:

(a) $(m)^{a+b}$ (b) $(m)^{a-b}$ (c) $(ab)^m$ (d) $(a/b)^m$

56) If 'a' and 'b' are rational numbers and m is a whole number, then the value of $a^m \div b^m$ is:

(a) $(ab)^m$ (b) $(m)^{a-b}$ (c) $(m)^{a+b}$ (d) $(a/b)^m$

57) 20,00,000 in Standard Form is:

(a) 0.2×10^5 (b) 2.0×10^6 (c) 10.2×10^6 (d) 10.2×10^5

58) 256000000 in Scientific Form (Standard Form) is:

(a) 0.256×10^9 (b) 2.56×10^8 (c) 0.2560×10^{10} (d) 2.56×10^7

59) $(-1)^{101}$ is equal to:

(a) 0 (b) 1 (c) -1 (d) 101

60) If $(\frac{3}{4})^x \div (\frac{3}{4})^2 = (\frac{3}{4})^5$then x is:

(a) 7 (b) 3 (c) $\frac{5}{2}$ (d) -3

61) The exponential form of 10000 is

(a) 10^3 (b) 10^4 (c) 10^5 (d) none of these

62) The exponential form of 100000 is

(a) 10^3 (b) 10^4 (c) 10^5 (d) none of these

63) The exponential form of 81 is

(a) 3^4 (b) 3^3 (c) 3^2 (d) none of these

64) The exponential form of 125 is

(a) 5^4 (b) 5^3 (c) 5^2 (d) none of these

65) The exponential form of 32 is

(a) 2^3 (b) 2^4 (c) 2^5 (d) none of these

66) The exponential form of 243 is

(a) 3^5 (b) 3^4 (c) 3^3 (d) 3^2

67) The exponential form of 64 is

(a) 2^5 (b) 2^6 (c) 2^7 (d) 2^8

68) The exponential form of 625 is

(a) 5^2 (b) 5^3 (c) 5^4 (d) 5^5

69) The exponential form of 1000 is

(a) 10^1 (b) 10^2 (c) 10^3 (d) 10^4

70) The value of $(-2)^3$ is

(a) 8 (b) -8 (c) 16 (d) -16

71) The value of $(-2)^4$ is

(a) 8 (b) -8 (c) 16 (d) -16

72) What is the base in 8^2?

(a) 8 (b) 2 (c) 6 (d) 10

73) What is the exponent in 8^2?

(a) 8 (b) 2 (c) 16 (d) 6

74) $(-1)^{even}$ number=

(a) -1 (b) 1 (c) 0 (d) none of these

75) $(-1)^{Odd}$ number =

(a) -1 (b) 1 (c) 0 (d) none of these

76) 0x 10^4=

(a) 0 (b) 10^4 (c) 1 (d) none of these

77) 1f $2^3 \times 2^4 = 2^?$, then? =

(a) 3 (b) 4 (c) 1 (d) 7

78) If $(-3)^4 \times (-3)^6 = (-3)^?$, then? =

(a) 4 (b) 10 (c) 6 (d) 2

79) $2^7 \div 2^3$ =

(a) 2^4 (b) 2^{10} (c) 2 (d) $\frac{1}{2}$

80) $10^6 \div 10^5$=

(a) 10^1 (b) 10^5 (c) 10^6 (d) 10^{11}

81) b x b x b x b x b=

(a) b^5 (b) b^4 (c) b^6 (d) b^3

82) $(-5)^4$=

(a) 125 (b) 625 (c) 375 (d) 125

83) $a^m \times a^n$ =

(a) a^{m+n} (b) a^{m-n} (c) a^{mn} (d) $a^{m/n}$

84) $a^m \div a^n$=

(a) a^{m+n} (b) a^{m-n} (c) a^{mn} (d) a^{mn}

85) $(2^2)^3$=

(a) 2^2 (b) 2^3 (c) 2^1 (d) 2^6

86) $(5^2)^{10}$=

(a) 5^2 (b) 5^{20} (c) 5^{10} (d) 5^5

87) $(a^m)^n$=

(a) a^{m+n} (b) a^{m-n} (c) a^{mn} (d) $a^{m/n}$

88) if a is any non-zero integer, then a^0=

(a) a (b) 0 (c) 1 (d) none of these

89) 3^0=

(a) 0 (b) 1 (c) 3 (d) none of these

90) $3^0 \times 4^0 \times 5^0$=

(a) 0 (b) 1 (c) 3 (d) none of these

91) $(2^0 + 3^0) \times 4^0$ =

(a) 1 (b) 3 (c) 4 (d) 5

92) $3^0 + 4^0 + 5^0$=

(a) 1 (b) 2 (c) 3 (d) none of these

93) which of the following true?

(a) $2^0=(100)^0$ (b) $10^2 \times 10^8 \times 10^{16}$ (c) $2^2 \times 3^3 = 6^5$ (d) $2^3 > 3^2$

94) $(2^2 \times 2)^2$=

(a) 2^3 (b) 2^4 (c) 2^5 (d) 2^6

95) $\frac{3^8}{3^5 \times 3^3}$ =

(a) 1 (b) 3 (c) 5 (d) 8

96) $\left(\frac{a^4}{a^2}\right) \times a^3$ =

(a) a^4 (b) a^5 (c) a^6 (d) a^8

97) $8^2 \div 2^4$=

(a) 1 (b) 2 (c) 3 (d) 4

98) $(-2a)^3$=

(a) $2a^3$ (b) $4a^3$ (c) $8a^3$ (d) $-8a^3$

99) $a^m \div b^m$ =

(a) $a^m b^m$ (b) $\left(\frac{a}{b}\right)^m$ (c) $\frac{a}{b}$ (d) 1

100) $(ab)^m$ =

(a) $a^m b^m$ (b) $a^m b$ (c) ab^m (d) ab

101) 333 in standard form is

(a) 3.33×10^2 (b) 3.33×10^3 (c) 3.33×10^1 (d) 3.33×10^4

102) 6000 in standard form is

(a) 6×10^3 (b) $6x10^6$ (c) 6×10^4 (d) 6×10^5

103) 3430000 in standard form is

(a) 3.43×10^6 (b) 3.43×10^4 (c) 3.43×10^2 (d) 3.43×10^{10}

104) 1353000000 in standard form is

(a) 1.353×10^9 (b) 1.353×10^6 (c) 1.353×10^3 (d) 1.353×10^{12}

105) 100000000000 in standard form is

(a) 1×10^8 (b) 1×10^9 (c) 1×10^{10} (d) 1×10^{11}

42 x 1 = 42

106) If $a^x = 1$, then the value of x is _____ where $a \neq 1$.

107) $(6^4 \div 6^3) \times (1)^{92} \times 2^{36} \div 2^{32}$ = _____

108) $\left(\frac{11}{15}\right)^4 \times (\ldots\ldots)^5 = \left(\frac{11}{15}\right)^9$

109) $\left(\frac{-1}{4}\right)^3 \times \left(\frac{-1}{4}\right)^{\ldots\ldots} = \left(\frac{-1}{4}\right)^{11}$.

110) $432 = 2^4 \times 3$ .....

111) $88880000000 =$ ..... $\times 10^{10}$

112) $340900000 = 3.409 \times 10^{\cdots\cdots}$

113) $53700000 =$ ..... $\times 10^{7}$

114) $27500000 = 2.75 \times 10^{\cdots}$

115) < , > or = sign. 3^2 15

116) < , > or = sign. 2^3 ..... 3^2

117) < , > or = sign. 7^4 ..... 5^4

118) < , > or = sign. 10000 ..... 10^5

119) < , > or = sign. 6^3 ..... 4^4

120) 3^2 _____ 15

121) 7^4 _____ 5^4

122) 10000 _____ 10^5

123) $(-2)^{31} \times (-2)^{13} = (-2)^{\text{——}}$

124) $(-3)^8 \div (-3)^5 = (-3)^{\text{———}}$

125) $\left[\left(\frac{7}{11}\right)^3\right]^4 = \left(\frac{7}{11}\right)^{\text{—}}$

126) $\left(\frac{6}{13}\right)^{10} \div \left[\left(\frac{6}{3}\right)^5\right]^2 = \left(\frac{6}{13}\right)^{\text{—}}$

127) $\left[\left(\frac{-1}{4}\right)^{16}\right]^2 = \left(\frac{-1}{4}\right)^{\text{——}}$

128) $\left(\frac{13}{14}\right)^5 + (\text{\_\_\_})^2 = \left(\frac{13}{14}\right)^3$

129) $a^6 \times a^5 \times a^0 = a^{\text{-}}$

130) 1 million = $10^{\text{——}}$

131) 1 lakh = $10^{\text{—}}$

132) $729 = 3^{\text{—}}$

133) $\left(\frac{2}{3}\right)^2 \times \left(\frac{2}{3}\right)^3 =$_____

134) $\left(\frac{1}{2}\right)^5 \div \left(\frac{1}{2}\right)^3 =$_____

135) $\left(\frac{6}{7}\right)^5 \div \left(\frac{6}{7}\right)^3 =$_____

136) $\left(\frac{11}{13}\right)^o =$_____

137) $(2 \times 3)^\circ =$_____

138) $\left\{\frac{2^2}{3^3}\right\}^o =$_____

139) $\{(-9)^0\}^5 =$_____

140) $\frac{32}{243}$ is expressed in power notation as_____

141) $\left(\frac{1}{3}\right)^4$is expressed in product form as _____

142) $\left(\frac{-3}{4}\right)\times\left(\frac{-3}{4}\right)\times\left(\frac{-3}{4}\right)\times\left(\frac{-3}{4}\right)\times\left(\frac{-3}{4}\right)\times\left(\frac{-3}{4}\right)$ is expressed in exponential form as_____

143) $\left(\frac{2}{3}\right)^5$is expressed in exponential form as_____

144) The weight of a body is about 6,600,000,000,000,000,000,000 metric tons.Its standard form is_____ metric tons.

145) The distance between Sun and Saturn is 1.433500,000,000 m. Its standard form is _____m.

146) The distance between Saturn and Uranus is 1,439,000,000,000 m.Its standard form is _____m

147) The distance between Sun and Earth is 149,600,000,000m.lts standard form is_____ m.

39 x 1 = 39

148) $10 \times 10^{11} = 100^{11}$

(a) True (b) False

149) $2^3 > 5^2$

(a) True (b) False

150) $2^3 \times 3^2 = 6^5$

(a) True (b) False

151) $3^0 = (1000)^0$

(a) False (b) True

152) $2^0 \times 3^0 \times 0^1 \times 2^{136} = 1$

(a) True (b) False

153) $x^0 \text{ X } x^0 = x^0 \div x^0$ is true for all non-zero values of x.

(a) False (b) True

154) 4^9 is greater than 16^3.

(a) False (b) True

155) $\left(\frac{2}{5}\right)^3 \div \left(\frac{5}{2}\right)^3 = 1.$

(a) True (b) False

156) $5° \times 25° \times 125° = (5°)^6$

(a) False (b) True

157) $\left(\frac{4}{3}\right)^5 \times \left(\frac{5}{7}\right)^5 = \left(\frac{4}{3} \div \frac{5}{7}\right)^5.$

(a) True (b) False

158) $\left(\frac{7}{3}\right)^2 \times \left(\frac{7}{3}\right)^5 = \left(\frac{7}{3}\right)^{10}.$

(a) True (b) False

159) $876543 = 8 \times 10^5 + 7 \times 10^4 + 6 \times 10^3 + 5 \times 10^2 + 4 \times 10^1 + 3 \times 10^0$

(a) False (b) True

160) $8 \times 10^6 + 2 \times 10^4 + 5 \times 10^2 + 9 \text{ X } 10^0 = 8020509$

(a) False (b) True

161) $4^0 + 5^0 + 6^0 = (4+5+6)^0$

(a) True (b) False

162) $(2^5)^6 = 2^{11}$

(a) True (b) False

163) $3^7 \div 3^{-3} = 3^4$

(a) True (b) False

164) $2^6 x 7^6 = 14^6$

(a) False (b) True

165) $a^5 \times a^4 \times a^{-3} \times a^{-2} = a^4$

(a) False (b) True

166) $1.001 \times 10^{-3} = 1001$

(a) True (b) False

167) $5 \times 10^5 + 3 \times 10^3 + 2 \times 1\ 0 = 50302$

(a) True (b) False

168) $0.0016432001 = 1.6432001 \times 10^{-3}$

(a) False (b) True

169) $9001006001 = 9 \times 10^9 + 1 \times 10^6 + 6 \times 10^3 + 1 \times 10^0$

(a) False (b) True

170) One million = 10^7

(a) True (b) False

171) One hour = 60^2 seconds

(a) False (b) True

172) $1^0 \times 0^1 = 1$

(a) True (b) False

173) $(-3)^4 = -12$

(a) True (b) False

174) $3^4 > 4^3$

(a) False (b) True

175) $\left(\frac{-3}{5}\right)^{100} = \frac{(-3)^{100}}{(-5)^{100}}$

(a) False (b) True

176) $(10 + 10)^{10} = 10^{10} + 10^{10}$

(a) True (b) False

177) In the standard form, a large number can expressed a decimal number between 0 and 1, multiplied by a power of 10

(a) False (b) True

178) $600060 = 6 \times 10^5 + 6 \times 10^2$

(a) True (b) False

179) $4 \times 10^5 + 3 \times 10^4 + 2 \times 10^3 + 1 \times 10^0 = 432010$

(a) True (b) False

180) 4^2 is greater than 2^4

(a) True (b) False

181) $x^m + x^m = x^{2m}$ where x is a non-zero rational number and m is a positive integer.

(a) True (b) False

182) $x^m + y^m = (x \times y)^{2m}$, where x and y are non-zero rational numbers and m is a positive integer.

(a) True (b) False

183) $x^m \div y^m = (x \div y)^m$ where x and yare rational nonzero numbers is m, positive integer.

(a) False (b) True

184) x^m x x^n = x^{m+n}, where x is a non-zero rational number and m, n are positive integers.

(a) False (b) True

185) $\left(\frac{4}{3}\right)^5 \div \left(\frac{5}{7}\right)^5 = \left(\frac{4}{3} + \frac{5}{7}\right)^5$

(a) True (b) False

186) $\left(\frac{5}{8}\right)^9 \times \left(\frac{5}{4}\right)^4 = \left(\frac{5}{8}\right)^4$

(a) True (b) False

11 x 1 = 11

187) $(a^m)^n$

188) $a^m \div b^m$

189) a^m x b^m

190) 2^0 x 3^2 x 4^6 x 4^2

191) $\left(\frac{2}{5}\right)^6 \div \left(\frac{2}{5}\right)^4$.

192) $\left(\frac{3}{4}\right)^6 \div \left(\frac{3}{4}\right)^5 \times \frac{1}{2}$.

193) $(1)^{200}$ x $(2)^{198} \div (2)^{194}$

194) Exponential form of 625

195) Value of $(\frac{3}{4})^2 \times (\frac{5}{3})^2$

196) 300000000 expressed in Standard Form

197) 3.1 X 10^9 expressed in normal form

(1) 16

(2) $\left(\frac{a}{b}\right)^m$.

(3) $(ab)^m$

(4) 5^4

(5) $(a)^{mn}$

(6) $\frac{4}{25}$.

(7) $\frac{3}{8}$.

(8) $\frac{25}{16}$

(9) 3100000000

(10) 2304

(11) 3.0 x 10^8

17 x 1 = 17

198) What is the value of $(\frac{3}{4})^0$?

199) What is the value of $x^a \times x^b$?

200) Solve: $(\frac{6}{7})^5 + (\frac{6}{7})^3$

201) Solve: $\frac{x^3 \times x^5}{x^2}$

202) Calculate $(2^3)^5$.

203) What is the exponent of $(-11)^5$?

204) What is the base of $(b)^{25}$?

205) What is the product form of p^5?

206) What is the exponential form of $\frac{4}{3}$x $\frac{4}{3}$x $\frac{4}{3}$x$\frac{4}{3}$x $\frac{4}{3}$?

207) What is the Scientific Notation of 3801?

208) What is the value of any rational number raised to power 0?

209) What is the value of (-1) raised to power "an even whole number"?

210) What is the value of $(-125)^\circ$ x $(100)^\circ$ x $(99)^\circ$?

211) Find $2^\circ + 3^\circ + 4^\circ$.

212) Find $3^2 - 2^3$.

213) Find 2^5 x 2^3

214) Write in the normal form: 1.2 x 10^{10}

333 x 2 = 666

215) Express 729 as a power of 3

216) Express 128 as a power of 2

217) Express 343 as a power of 7

218) Find the value of 2^6

219) Find the value of 9^3
220) Find the value of 11^2
221) Find the value of 5^4
222) Express the following in exponential form: 6 x 6 x 6 x 6
223) Express the following in exponential form: t x t
224) Express the following in exponential form: b x b x b x b
225) Express the following in exponential form: 5 x 5 x 7 x 7 x 7
226) Express the following in exponential form: 2 x 2 x a x a
227) Express the following in exponential form: a x a x a x c x c x c x c x d
228) Express each of the following numbers using exponential notation: 512
229) Express each of the following numbers using exponential notation: 343
230) Express each of the following numbers using exponential notation: 729
231) Express each of the following numbers using exponential notation: 3125
232) Identify the greater number, wherever possible, in each of the following? 4^3 or 3^4
233) Identify the greater number, wherever possible, in each of the following? 5^3 or 3^5
234) Identify the greater number, wherever possible, in each of the following? 2^8 or 8^2
235) Identify the greater number, wherever possible, in each of the following? 100^2 or 2^{100}
236) Identify the greater number, wherever possible, in each of the following? 2^{10} or 10^2
237) Express each of the following as product of powers of their prime factors. 648
238) Express each of the following as product of powers of their prime factors. 405
239) Express each of the following as product of powers of their prime factors. 540
240) Express each of the following as product of powers of their prime factors. 3600
241) Simplify 2 x 10^3
242) Simplify 7^2 x2^2
243) Simplify 2^3 x 5
244) Simplify 3 x 4^4
245) Simplify 0 x10^2
246) Simplify 5^2 x3^3
247) Simplify 2^4 x 3^2
248) Simplify 3^2 x10^4
249) Simplify $(-4)^3$
250) Simplify (-3) x$(-2)^3$
251) Simplify $(-3)^2$ x $(-5)^2$
252) Simplify $(-2)^3$ x $(-10)^3$
253) Express the following as a power of - 3: 81
254) Express the following as a power of - 3: - 243
255) Express the following as a power of - 4: - 64
256) Express the following as a power of - 4: 256
257) Express the following numbers as a product of power of prime factors: 100
258) Express the following numbers as a product of power of prime factors: 150
259) Write base and exponent of the following numbers: 7^3
260) Write base and exponent of the following numbers: 9^9
261) Write base and exponent of the following numbers: a^b
262) Write base and exponent of the following numbers: $(-3)^5$
263) Write the reciprocal of the following rational numbers. $\frac{2}{5}$

264) Write the reciprocal of the following rational numbers. $-\frac{7}{11}$

265) Write the reciprocal of the following rational numbers. $\frac{5}{1}$

266) Write the reciprocal of the following rational numbers. $\left(\frac{3}{7}\right)^2$

267) Express the following numbers as a power of 5. 125

268) Express the following numbers as a power of 5. 625

269) Express the following numbers as a power of - 3: -27

270) Express the following numbers as a power of - 3: 729

271) Express the following numbers as a product of the power of prime factors. 216

272) Express the following numbers as a product of the power of prime factors. 225

273) Express the following numbers in the exponential form: 5x 5 x 5 x 5 x 5

274) Express the following numbers in the exponential form: 3 x 3 x 5 x 5 x 7 x 7

275) Express the following numbers in the exponential form: 4x4x4xmxm

276) Express the following numbers in the exponential form: 2x2x2x ... x2(10times)

277) Write the greater number from the following pairs: 3^2,2^3

278) Write the greater number from the following pairs: 5^2,2^5

279) Write the greater number from the following pairs: 5^3,2^6

280) Write the greater number from the following pairs: 2^9,7^4

281) Write symbols' > ' greater than, '< ' less than or '=' equals to for the following numbers. 2^6 ..... 3^4

282) Write symbols' > ' greater than, '< ' less than or '=' equals to for the following numbers. 5^2 ..... 3^3

283) Write symbols' > ' greater than, '< ' less than or '=' equals to for the following numbers. 7^4 ..... 5^4

284) Write symbols' > ' greater than, '< ' less than or '=' equals to for the following numbers. 2^4 .....4^2

285) Simplify the following. 2^2x 5^2

286) Simplify the following. 3^3 x 5^1

287) Simplify the following. 2 x 3 x 5^2x 7^0

288) Simplify the following. 3 x 5^2 x 11

289) Simplify the following: 7^3 x 2^3

290) Simplify the following: 0x5^{10}x2^1

291) Simplify the following: 2^1x 3^1x 5x7

292) Simplify the following: 4 x 5^2x 7

293) [$(2^2)^3$ X 3^6] X 5^6

294) $\frac{12^4 \times 9^3 \times 4}{6^3 \times 8^2 \times 27}$

295) $\frac{2 \times 3^4 \times 2^5}{9 \times 4^2}$

296) Using the laws of exponents, solve the following: 2^5 X 2^7

297) Using the laws of exponents, solve the following: 4^3 x 4^5

298) Using the laws of exponents, solve the following: $2^9 \div 2^6$

299) Using the laws of exponents, solve the following: $9^{11} \div 9^9$

300) Using the laws of exponents, solve the following: $(3^2)^{100}$

301) Using the laws of exponents, solve the following: 7^3 x 2^3

302) Using the laws of exponents, solve the following: $4^5 \div 7^5$

303) Using the laws of exponents, solve the following: $l^4 \div q^4$

304) Using the laws of exponents, solve the following: $\frac{2^6}{2^6}$

305) Simplify and write in exponential form: $2^5 \times 2^3$

306) Simplify and write in exponential form: $p^3 \times p^2$

307) Simplify and write in exponential form: $4^3 \times 4^2$

308) Simplify and write in exponential form: $a^3 \times a^2 \times a^7$

309) Simplify and write in exponential form: $5^3 \times 5^7 \times 5^{12}$

310) Simplify and write in exponential form: $(-4)^{100} \times (-4)^{20}$

311) Simplify and write in exponential form: $2^9 \div 2^3$

312) Simplify and write in exponential form: $10^8 \div 10^4$

313) Simplify and write in exponential form: $9^{11} \div 9^7$

314) Simplify and write in exponential form: $20^{15} \div 20^{13}$

315) Simplify and write in exponential form: $7^{13} \div 7^{10}$

316) Simplify and write the answer in exponential form: $(6^2)^4$

317) Simplify and write the answer in exponential form: $(2^2)^{100}$

318) Simplify and write the answer in exponential form: $(7^{50})^2$

319) Simplify and write the answer in exponential form: $(5^3)^7$

320) Put into another form using $a^m \times b^m = (ab)^m$: $4^3 \times 2^3$

321) Put into another form using $a^m \times b^m = (ab)^m$: $2^5 \times b^5$

322) Put into another form using $a^m \times b^m = (ab)^m$: $a^2 \times t^2$

323) Put into another form using $a^m \times b^m = (ab)^m$: $5^6 \times (-2)^6$

324) Put into another form using $a^m \times b^m = (ab)^m$: $(-2)^4 \times (-3)^4$

325) Put into another form using $a^m \div b^m = \left(\frac{a}{b}\right)^m$: $4^5 \div 3^5$

326) Put into another form using $a^m \div b^m = \left(\frac{a}{b}\right)^m$: $2^5 \div b^5$

327) Put into another form using $a^m \div b^m = \left(\frac{a}{b}\right)^m$: $(-2)^3 \div b^3$

328) Put into another form using $a^m \div b^m = \left(\frac{a}{b}\right)^m$: $p^4 \div q^4$

329) Put into another form using $a^m \div b^m = \left(\frac{a}{b}\right)^m$: $5^6 \div (-2)^6$

330) Using laws of exponents, simplify and write the answer in exponential form: $3^2 \times 3^4 \times 3^8$

331) Using laws of exponents, simplify and write the answer in exponential form: $6^{15} \div 6^{10}$

332) Using laws of exponents, simplify and write the answer in exponential form: $a^3 \times a^2$

333) Using laws of exponents, simplify and write the answer in exponential form: $7^x \times 7^2$

334) Using laws of exponents, simplify and write the answer in exponential form: $(5^2)^3 \div 5^3$

335) Using laws of exponents, simplify and write the answer in exponential form: $2^5 \times 5^5$

336) Using laws of exponents, simplify and write the answer in exponential form: $a^4 \times b^4$

337) Using laws of exponents, simplify and write the answer in exponential form: $(3^4)^3$

338) Using laws of exponents, simplify and write the answer in exponential form: $(2^{20} \div 2^{15}) \times 2^3$

339) Using laws of exponents, simplify and write the answer in exponential form: $8^t \div 8^2$

340) Simplify and express each of the following in exponential form: $\frac{2^3 \times 3^4 \times 4}{3 \times 32}$

341) Simplify and express each of the following in exponential form: $[(5^2)^3 \times 5^4] \div 5^7$

342) Simplify and express each of the following in exponential form: $25^4 \div 5^3$

343) Simplify and express each of the following in exponential form: $\frac{3\times7^2\times11^8}{21\times11^3}$

344) Simplify and express each of the following in exponential form: $\frac{3^7}{3^4\times3^3}$

345) Simplify and express each of the following in exponential form: $2^0 + 3^0 + 4^0$

346) Simplify and express each of the following in exponential form: $2^0 \times 3^0 \times 4^0$

347) Simplify and express each of the following in exponential form: $(3^0 + 2^0) \times 5^0$

348) Simplify and express each of the following in exponential form: $\frac{2^8\times a^5}{4^3\times a^3}$

349) Simplify and express each of the following in exponential form: $\left(\frac{a^5}{a^3}\right) \times a^8$

350) Simplify and express each of the following in exponential form: $\frac{4^5\times a^8b^3}{4^5\times a^5b^2}$

351) Simplify and express each of the following in exponential form: $(2^3 \times 2)^2$

352) Express each of the following as a product of prime factors only in the exponential form: 108 x 192

353) Express each of the following as a product of prime factors only in the exponential form: 270

354) Express each of the following as a product of prime factors only in the exponential form: 729 x 64

355) Express each of the following as a product of prime factors only in the exponential form: 768

356) Simplify: $\frac{(2^5)^2\times7^3}{8^3\times7}$

357) Simplify: $\frac{25\times5^2\times t^8}{10^3\times t^4}$

358) Simplify: $\frac{3^5\times10^5\times25}{5^7\times6^5}$

359) Evaluate: $2^4 \times 2^5$

360) Evaluate: $2^{14} \div 2^{12}$

361) Evaluate: $12^3 \times 3^3$

362) Evaluate: $(3^4)^6$

363) Using laws of exponents, $a^m \times a^n = a^{m+n}$, simplify and write the answer in exponential form: $2^3 \times 2^5$

364) Using laws of exponents, $a^m \times a^n = a^{m+n}$, simplify and write the answer in exponential form: $3^4 \times 3^6 \times 3^{-5}$

365) Using laws of exponents, $a^m \times a^n = a^{m+n}$, simplify and write the answer in exponential form: $(-5)^3 \times (-5)^5$

366) Using laws of exponents, $a^m \times a^n = a^{m+n}$, simplify and write the answer in exponential form: $a^3 \times a^5 \times a^{-3} \times a^{-5}$

367) Using laws of exponents, $a^m \div a^n = a^{m-n}$, simplify and write the answer in exponential form: $a^9 \div a^6$

368) Using laws of exponents, $a^m \div a^n = a^{m-n}$, simplify and write the answer in exponential form: $7^5 \div 7^4$

369) Using laws of exponents, $a^m \div a^n = a^{m-n}$, simplify and write the answer in exponential form: $(-3)^7 \div (-3)^5$

370) Using laws of exponents, $a^m \div a^n = a^{m-n}$, simplify and write the answer in exponential form: $b^5 \div b^5$

371) Using laws of exponents simplify and write the answer in exponential form: $(2^4)^3$

372) Using laws of exponents simplify and write the answer in exponential form: $(3^3)^2$

373) Using laws of exponents simplify and write the answer in exponential form: $(5^{-2})^3$

374) Using laws of exponents simplify and write the answer in exponential form: $(7^{-3})^{-5}$

375) Using laws of exponents and simplify: 2^5x3^5

376) Using laws of exponents and simplify: 5^3x3^3

377) Using laws of exponents and simplify: a^mxb^m

378) Using laws of exponents and simplify: $2^4x1^4x5^4$

379) Simplify: $2^6x2^{-6}x3^3x3^{-3}$

380) Simplify: $5^3 \div 5^3$

381) Simplify: $5^6x5^{-4}x10$

382) Simplify: $7^2\ x7^{-2}\ x2^3\ x2^{-3}$

383) Using laws of exponents and solve the following: $a^{-5}\ x\ a^4\ x\ a^2\ x\ b$

384) Using laws of exponents and solve the following: $\frac{5^4}{5^4}$

385) Using laws of exponents and solve the following: $4^3 \div [4^6\ x4^{-3}]$

386) Using laws of exponents and solve the following: a x a x b x b x b x c x c x c

387) Simplify the following expression and write the answer in exponential form: $\frac{3^4 \times 5^6 \times 7}{3^2 \times 5^{-3} \times 7^2}$

388) Simplify the following expression and write the answer in exponential form: $\frac{2^8 \times 5^4 \times 4^3}{2^{-2} \times 5^{-6} \times 4^3}$

389) Simplify the following expression and write the answer in exponential form: $2^0+5^0+7^0$

390) Simplify the following expression and write the answer in exponential form: $\frac{a^6 \times b^9 \times c^{10}}{a^2 \times b^3 \times c^5 \times d^{-5}}$

391) Express in exponential notation.
25

392) Express in exponential notation.
36

393) Express in exponential notation.
81

394) Write m x m x m x m x m x m x n x n in exponential form.

395) Express - 128 as powers of (- 2).

396) Evaluate. 2^5

397) Evaluate. 3^5

398) Evaluate. $(-3)^4$

399) Write expanded form of the following numbers: 2638

400) Write expanded form of the following numbers: 69170

401) Write expanded form of the following numbers: 56439

402) Write the standard form of the following numbers: 324688000

403) Write the standard form of the following numbers: 123870000000

404) Write the base and the exponent in each of the following.
2^6

405) Write the base and the exponent in each of the following. 3^{-2}

406) Write the base and the exponent in each of the following.
9

407) Evaluate. $(-2)^2\ x\ (-3)^3$

408) Evaluate. $(-3)^2\ x\ 4^3$

409) Evaluate. $(-1)^{19}\ x\ (-1)^{26}$

410) Evaluate. $(-1)^{21}\ -\ (-1)^{22}$

411) Find the difference between 5^3 and 2^4.

412) Write the expanded form of 9343.

413) Write the standard form of 120200000

414) Write the standard form of 432164000

415) Write expanded form of the following numbers.2691

416) Write expanded form of the following numbers. 170051

417) Write expanded form of the following numbers.630100

418) Write expanded form of the following numbers.1001001

419) Express each of the following in single exponential form.
$2^3 \times 3^3$

420) Express each of the following in single exponential form.
$2^4 \times 4^2$

421) Express each of the following in single exponential form.
$5^2 \times 7^2$

422) Express each of the following in single exponential form.
$(-5)^5 \times (-5)$

423) Express each of the following in single exponential form.
$(-3)^3 \times (-10)^3$

424) Express each of the following in single exponential form.
$(-11)^2 \times (-2)^2$

425) Write the standard form of the following numbers.38611000

426) Write the standard form of the following numbers.100901001

427) Write the standard form of the following numbers.2649010000

428) Write the standard form of the following numbers. 84200000000

429) Find the number from following expanded forms $1x10^6+5x10^4+1x10^2$

430) Find the number from following expanded forms $7\ x10^5 + 6x10^4 + 4x10^3 + 3x10^2 + 2\ X10^1 + 1x10^0$

431) Find the number from following expanded forms $9x10^6+1x10^3+1x10^0$

432) Find the number from following expanded forms $6x10^9 + 7\ x10^8 + 8x10^7 + 6x10^6 + 4x10^5 + 3x10^4 + 2\ x1\ 0^3$

433) Express the following numbers in standard form.
7647000

434) Express the following numbers in standard form.
81900000

435) Express the following numbers in standard form.
583000000000

436) Express the following numbers in standard form
24 billion

437) Find the value of $2^5 \times 4^2 \times 2^2$

438) Find the value of $(-3^5) \times 2^2 \times 3^2$

439) Find the value of $-(-4)^3 \times 5^2 \times 6^3$

440) Write number corresponding to given standard form. $2.1\ x10^6$

441) Write number corresponding to given standard form. $9.001\ x10^3$

442) Write number corresponding to given standard form. $6.230011\ x10^{-2}$

443) Write number corresponding to given standard form. $4.861654x10^7$

444) Write number corresponding to given standard form. $6.2153x10^{-3}$

445) Write number corresponding to given standard form.7.110011×10^4

446) Write the numbers in standard form corresponding to given statements. The distance between Sun and Saturn is 1433500000000 m.

447) Write the numbers in standard form corresponding to given statements. Speed of light in vacuum is 300, 000, 000 m/s.

448) Expand by expressing powers of 10 in the exponential form. 172

449) Expand by expressing powers of 10 in the exponential form. 5643

450) Expand by expressing powers of 10 in the exponential form. 56439

451) Expand by expressing powers of 10 in the exponential form.176428,

452) Write the following numbers in the expanded forms: 279404

453) Write the following numbers in the expanded forms: 3006194

454) Write the following numbers in the expanded forms: 2806196

455) Write the following numbers in the expanded forms: 120719

456) Write the following numbers in the expanded forms: 20068

457) Find the number from each of the following expanded forms: $8 \times 10^4 + 6 \times 10^3 + 0 \times 10^2 + 4 \times 10^1 + 5 \times 10^0$

458) Find the number from each of the following expanded forms: $4x10^5 + 5x10^3 + 3x10^2 + 2x10^0$

459) Find the number from each of the following expanded forms: $3x10^4 + 7\ x10^2 + 5 \times 10^0$

460) Find the number from each of the following expanded forms: $9x10^5 + 2x10^2 + 3x10^1$

461) Express the following numbers in standard form: 50000000

462) Express the following numbers in standard form: 7000000

463) Express the following numbers in standard form: 3186500000

464) Express the following numbers in standard form: 390878

465) Express the following numbers in standard form: 39087.8

466) Express the following numbers in standard form: 3908.78

467) Express the number appearing in the following statements in standard form. The distance between Earth and Moon is 384,000,000 m.

468) Express the number appearing in the following statements in standard form. Speed of light in vacuum is 300,000,000 m/s.

469) Express the number appearing in the following statements in standard form. Diameter of the Earth is 1,27,56,000 m.

470) Express the number appearing in the following statements in standard form. Diameter of the Sun is 1,400,000,000 m.

471) Express the number appearing in the following statements in standard form. In a Galaxy, there are on an average 100,000,000,000 stars.

472) Express the number appearing in the following statements in standard form. The universe is estimated to be about 12,000,000,000 years old.

473) Express the number appearing in the following statements in standard form. The distance of the Sun from the centre of the Milky Way Galaxy is estimated to be 300,000,000,000,000,000,000 m.

474) Express the number appearing in the following statements in standard form. 60,230,000,000,000,000,000,000 molecules are contained in a drop of water weighing 1.8 g.

475) Express the number appearing in the following statements in standard form. The Earth has 1,353,000,000 cu km of sea water.

476) Express the number appearing in the following statements in standard form. The population of India was about 1,027,000,000 in March 2001

477) Express the following in exponential form.
3 x 3 x 3 x a x a x a x a

478) Express the following in exponential form.
a x a x b x b x b x c x c x c x c

479) Express the following in exponential form.
s x s x t x t x s x s x t

480) How many times of 30 must be added to get a sum equal to 30^7?

481) What's the error? A student said that $\frac{3^5}{9^5}$ is the same as $\frac{1}{15}$. What mistake has the student made?

482) Express in the exponential notation: 100000

483) Express in the exponential notation: -512

484) Write I x I x I x I x I x m x m x m in the exponential form.

485) Evaluate: 2^7

486) Evaluate: $(-3)^5$

487) Express 144 as the product of power of prime numbers.

488) Multiplying Powers with the Same Base
4^2 X 4^5

489) Multiplying Powers with the Same Base
3^8 x 3^3

490) Multiplying Powers with the Same Base
$(-6)^2$ x $(-6)^3$

491) Multiplying Powers with the Same Base
b^2 X b^5

492) Dividing Powers with the Same Base
$5^7 \div 5^3$

493) Dividing Powers with the Same Base
$2^{10} \div 2^8$

494) Dividing Powers with the Same Base
$(-8)^6 \div (-8)^3$

495) Taking Power of a Power
$(2^3)^5$

496) Taking Power of a Power
$(5^3)^2$

497) Taking Power of a Power
$(-6^3)^4$

498) Multiplying Powers with the Same Exponents
2^3 x 3^3

499) Multiplying Powers with the Same Exponents
5^2 x 6^2

500) Multiplying Powers with the Same Exponents
$(-2)^4$ x $(-3)^4$

501) Dividing the Powers with the Same Exponents
$5^4 \div 3^4$

502) Dividing the Powers with the Same Exponents
$(-3)^2 \div p^2$

503) Express the following numbers in the standard form:
25,730

504) Express the following numbers in the standard form:
5,50,40,000

505) Express the following numbers in the standard form:
5568.5:

506) The mass of Uranus is 86,800,000,000,000,000,000,000,000 kg. Express it in standard form:

507) Verify: $4^2 \times 4^2 = 4^{2+2}$

508) Verify: $3^2 \times 3^3 = 3^{2+3}$.

509) Can you write the appropriate number in the box
$(-11)^2 \times (-11)^6 = (-11)^{\square}$.

510) Can you write the appropriate number in the box
$b2 \times b3 = b^{\square}$ (Remember, base is same; b is any number)

511) Can you write the appropriate number in the box
$c3 \times c4 = C^{\square}$ (c is any number)

512) Can you write the appropriate number in the box
$d^{10} \times d^{20} = d^{\square}$

513) Can you answer quickly?
$10^8 \div 10^3 = 10^{8-3} = 10^5$
$7^9 \div 7^6 = 7^{\square}$
$a^8 \div a^5 = a^{\square}$

514) Fill in the box:
For non-zero numbers band c,
$b^{10} \div b^5 = b^{\square}$
$c^{100} \div c^{90} = c^{\square}$

515) If you start from $3^6 = 729$, and proceed as shown in the above finding 3^5, 3^4,3^3, ... , etc, what will be 3^0 = ?

516) say true or false and justify your answer:
$10 \times 10^{11} = 100^{11}$

517) say true or false and justify your answer:
$2^3 > 5^2$

518) say true or false and justify your answer:
$2^3 \times 3^2 = 6^5$

519) say true or false and justify your answer:
$3^0 = (1000)^0$

520) Express the number 25730 in standard form.

521) Find the greater number in the following:
2^5 and 5^3.

522) Find the value of $\frac{3^7}{3^4 \times 3^3} \times 9$

523) Simplify: $[(5^2)^3 \times 5^4] \div 5^7$.

524) Identify the base and exponent of:
10^3

525) Identify the base and exponent of:
2^3

526) Identify the base and exponent of:
3^2

527) Identify the base and exponent of:
100^{10}

528) Identify the base and exponent of:
9°

529) Identify the base and exponent of:
9

530) Write in the exponential form:
10000

531) Write in the exponential form:
625

532) Write in the exponential form:
64

533) Write in the exponential form:
243

534) Write in the exponential form:
1331

535) Write in the exponential form:
2197

536) Find the value of:
2^5

537) Find the value of:
4^3

538) Find the value of:
3^4

539) Find the value of:
5^3

540) Find the value of:
7^3

541) Find the value of:
6^4

542) Find the value of:
$(-2)^3$

543) Find the value of:
$(-4)^3$

544) Find the value of:
$(-1)^5$

545) Find the value of:
$(-3)^4$

546) Find the value of: $(-5)^2$

547) Find the value of:
$(-7)^4$

40 x 3 = 120

548) Compare the following numbers: 2.7×10^{12}; 1.5×10^8

549) Compare the following numbers: 4×10^{14} ; $3x\ 10^{17}$

550) Express each of the following numbers using exponential notations.
1024

551) Express each of the following numbers using exponential notations.
1029

552) Express each of the following numbers using exponential notations.
$\frac{144}{875}$.

553) Express each of the following as a product of powers of their prime factors.
9000

554) Express each of the following as a product of powers of their prime factors.
2025

555) Express each of the following as a product of powers of their prime factors.
800

556) If $\frac{p}{q} = \left(\frac{-2}{3}\right)^9 \div \left(\frac{-2}{3}\right)^8$ then find the value of $\left(\frac{p}{q}\right)^2$

557) If $\frac{p}{q} = \left(\frac{3}{4}\right)^{18} \div \left(\frac{3}{4}\right)^{17}$, then find the value of $\left(\frac{p}{q}\right)^3$

558) Find m, so that $\left(\frac{2}{9}\right)^3 \times \left(\frac{2}{9}\right)^3 = \left(\frac{2}{9}\right)^{2m-1}$.

559) If $\frac{p}{q} = \left(\frac{3}{2}\right)^2 \div \left(\frac{9}{4}\right)^0$, then find the value of $\left(\frac{p}{q}\right)^3$.

560) Find the value of n, where n is an integer and $2^{n-5} \times 6^{2n-4} = \frac{1}{12^4 \times 2}$.

561) Express the following in usual form.
$8.01 \text{ x } 10^7$

562) If $2^{1998} - 2^{1997} - 2^{1996} + 2^{1995} = k.2^{1995}$, then the value of k is?

563) If $2^{n+2} - 2^{n+1} + 2^n = c \text{ x } 2^n$, then find the value of c.

564) Write the difference between 8^3 and 7^3

565) Write the difference between 5^4 and 4^3

566) Simplify: $\left(\frac{3}{4}\right)^4 \div \left(\frac{6}{8}\right)^2 \times \left(\frac{1}{2}\right)$

567) By using laws of exponents and simplify: $\frac{a^4 \times a^{-2} \times b^4}{b^2 \times a^8 \times a^{-6}}$

568) Write the number from the given expanded form: $4 \text{ x } 10^4 + 5 \text{ x } 10^3 + 3 \text{ x } 10^2 + 4 \text{ x } 10^1 + 2 \text{ x } 10^0$

569) Write 8054000000 in standard form

570) Write the number $6.234269 \text{ x } 10^6$ in the usual form.

571) Find five more such examples, where a number is expressed in exponential form. Also identify the base and the exponent in each case

572) Simplify the following and write the answer in exponential form:
$[\frac{5^6}{5^3}] \times 5^2$

573) Simplify the following and write the answer in exponential form:
$[(3^2)^3 \text{ x } 3^6] \div 3^6$

574) Write the following numbers in expanded form:
(a) 270404
(b) 230061

575) Simplify:
$[(2 \div 1)^{-2} \div (5 \div 1)^{-1}]^2 \times (\frac{-5}{8})^{-1}$

576) Find the values of n, when:
(a) $5^{2n} \text{ x } 5^3 = 5^9$
(b) $8 \text{ x } 2^{n+2} = 32$.

577) Simplify:
$\frac{10 \times 5^{n+1} + 25 \times 5^n}{3 \times 5^{n+2} + 10 \times 5^{n+1}}$

578) Express 256 as a power of 2.

579) Are a^3b^2 and a^2b^3 the same?

580) Which is greater-3^2 or 2^3?

581) Express the following as a product of prime factors:
1000

582) Express the following as a product of prime factors:
72

583) Express the following as a product of prime factors:
216

584) Find the value of:
$10 \text{ x } (-10)^3$

585) Find the value of:
$2 \times (-2)^4$

586) Find the value of:
$5 \times (-1)^5$

587) Find the value of:
$100 \times (-1)^{100}$

8 x 4 = 32

588) Find the value of n if:
$\frac{9^n \times 3^2 \times 3^n - (27)^2}{(3^3)^5 \times 2^3} = \frac{1}{27}$

589) By what number should $(-15)^{-1}$ be divided so that the quotient is $(-5)^{-1}$.

590) Simplify the following:
(a) $(6^{-1} - 8^{-1})^{-1} + (2^{-1} - 3^{-1})^{-1}$
(b) $\left\{6^{-1} + \left(\frac{3}{2}\right)^{-1}\right\}^{-1}$

591) 5. If $(25)^{n-1} + 100 = 5^{(2n-1)}$, find the value of n.

592) Write each of the following in power notation:
$(a)\ \left(-\frac{4}{3}\right) \times \left(-\frac{4}{3}\right) \times \left(-\frac{4}{3}\right) \times \left(-\frac{4}{3}\right) \times \left(-\frac{4}{3}\right)$
$(b)\ \left(-\frac{8}{3}\right) \times \left(-\frac{8}{3}\right) \times \left(-\frac{8}{3}\right) \times \left(-\frac{8}{3}\right) \times \left(-\frac{8}{3}\right) \times$

593) The speed of light in vacuum is 3×10^8 m/s. Sunlight takes about 8 min. to reach the Earth. Express distance of Sun from Earth in standard form.

594) Find x, such that $\left(\frac{1}{5}\right)^5 \times \left(\frac{1}{5}\right)^{19} = \left(\frac{1}{5}\right)^{8x}$

595) Simplify:
(a) $\frac{12^4 \times 9^3 \times 4}{6^3 \times 8^2 \times 27}$
(b) $2^3 \times a^3 \times 5a^4$

36 x 5 = 180

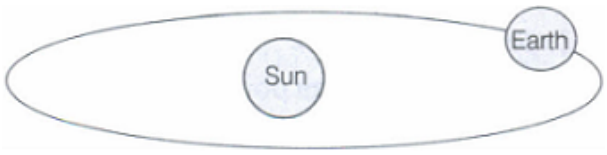
596) Find five examples, where a number is expressed in exponential form. Also, identify the base and the exponent in each case.

597) In our own planet, Earth, 361419000 sq km of area is covered by water and 148647000 sq km of area is covered by land. Find the approximate ratio of area covered with water to the area covered by land by converting these numbers into scientific notation. What value depict here?

598) Express the following in usual form.
1.75×10^{-3}

599) Simplify $\frac{5^{-2} \times 3^{-3} \times (125)^{2/3}}{(27)^{-2/3} \times (32)^{-1/5}}$.

600) A light year is a distance that light can travel in one year.
1 light year = 9,460,000,000,000 km
(a) Express one light year in scientific notation.
(b) The average distance between Earth and Sun is 1.496×10^8 km. Is the distance between Earth and the Sun greater than, less than or equal to one light year?



601) Find the value of x, such that $\left(\frac{1}{5}\right)^5 \times \left(\frac{1}{5}\right)^{19} = \left(\frac{1}{5}\right)^{8x}$.

602) Using laws of exponents simplify the following.
$\frac{\left(-\frac{3}{4}\right)^4 \times \left(\frac{125}{27}\right)}{\left(\frac{5}{3}\right)^2 \times \left(\frac{9}{16}\right)}$.

603) If the radius of Sun is 700000000 m and radius of Earth is 6400000 m. Then, write the value of $\frac{Radius\ of\ Earth}{Radius\ of\ Sun}$

604) If the distance between Earth and Moon is 384000000 m and the distance between the Sun and the Earth is 146900000000 m. Then, which have more distance moon or Sun from Earth. Explain it with the help of standard form of the number.

605) Using laws of exponents, solve the following: $\left[\left(\frac{-2}{3}\right)^4 \times \left(\frac{216}{125}\right)\right] \div \left[\left(\frac{6}{5}\right)^2 \times \left(\frac{4}{9}\right)\right]$

606) Simplify:

(i) $\left[\left\{\left(-\frac{1}{4}\right)^2\right\}^{-2}\right]^{-1}$

(ii) $\left(-\frac{3}{2}\right)^3 \div \left(-\frac{3}{2}\right)^6$

607) By what number should we multiply $(-8)^{-1}$ to obtain a product equal to 10^{-1}?

608) Express the following numbers in standard form.

(i) 31865000000

(ii) 3908.78

609) By what number should $(-4)^5$ be divided so that the quotient may be equal to $(-4)^3$?

610) A googol is the number 1 followed by 100 zeroes.

(a) How is a googol written as a power?

(b) How is a googol times a googol written as a pawer?

611) Compare 2.5×10^{18} and 5.2×10^{18}

612) Express the following in exponential form:

$\frac{2^3 \times 2^{10}}{2^5}$

613) Express the following in exponential form:

$\frac{4^7}{4^2} \times 4^5$

614) Express the following in exponential form:

$3^2 \times 3^3 \times 5^5$

615) Express the following in exponential form:

$[(2^3)^2 \times 3^6] . \times 5^6$

616) Express the following in exponential form:

$[6^4 \times 6^2] \div 6^3$

617) Express the following in exponential form:

$8^7 \div 2^{10}$

618) Simplify:

$\frac{4 \times 12^4 \times 9^3}{27 \times 8^2 \times 6^3}$

619) Simplify:

$\frac{2^5 \times 3^4 \times 2}{4^2 \times 9}$

620) Simplify:

$x^3 \times 2^3 \times 5x^4$

621) Simplify:

$\frac{4^5 \times 7^3}{4^4 \times 2 \times 7}$

622) Simplify:

$\frac{(-2)^2 \times (-3)^3}{(-1)^5 \times (-4)^2}$

623) Express the following numbers in expanded forms:

5901

624) Express the following numbers in expanded forms

12345

625) Express the following numbers in expanded forms
654321

626) Express the following numbers in the standard form:
86,400

627) Express the following numbers in the standard form:
9585.3

628) Express the following numbers in the standard form:
56,950

629) Express the following numbers in the standard form:
90040000000

630) Express the following numbers in normal form:
5.8×10^5

631) Express the following numbers in normal form:
4.0×10^{10}

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