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X Maths Real Number By: Rohin Gupta

(Q.1) Determine the prime factorization of the number 556920.

(a) $2^3 \times 3^3 \times 5 \times 7 \times 13 \times 17$ (b) $2^2 \times 3^2 \times 5 \times 7 \times 13 \times 17$

(c) $2^3 \times 3^2 \times 5 \times 7 \times 13 \times 17$ (d) None

(Q.2) Use Euclid's division algorithm to find the HCF of 210 and 55.

(a) 7 (b) 5 (c) 3 (d) 11

(Q.3) The areas of three fields are 165m2 , 195m2 and 285m2 respectively. From these flowers beds of equal size are to be made. If the breadth of each bed be 3 metres, what will be the maximum length of each bed.

(a) 4m (b) 5m (c) 6m (d) 7m

(Q.4) The sum of HCF & LCM of 204 and 1190 is

(a) 7154 (b) 7164 (c) 7174 (d) 7184

(Q.5) The L.C.M of 2261 and 2527 is

(a) $\frac{2261 \times 2527}{147}$ (b) $\frac{2261 \times 2527}{133}$ (c) $\frac{2261 \times 2527}{153}$ (d) $\frac{2261 \times 2527}{123}$

(Q.6) The LCM of two numbers is 14 times their HCF. The Sum of LCM and HCF is 600. If one number is 280 then the other number.

(a) 40 (b) 60 (c) 80 (d) 100

(Q.7) If the sum of two numbers is 55 and the H.C.F. and L.C.M. of these numbers are 5 and 120 respectively, then the sum of the reciprocals of the numbers is equal to:

(a) $\frac{55}{601}$ (b) $\frac{601}{55}$ (c) $\frac{11}{120}$ (d) $\frac{120}{11}$ (e) none

(Q.8) Which of the following is a non terminating repeating decimal?

(a) $\frac{6}{15}$ (b) $\frac{29}{343}$ (c) $\frac{35}{50}$ (d) $\frac{231}{210}$

(Q.9) Which of the following is a rational number?

(a) $5+\sqrt{5}$ (b) $\left(\sqrt{3}+\frac{1}{\sqrt{3}}\right)^2$ (c) $\left(3+\frac{1}{\sqrt{2}}\right)^2$ (d) $\frac{15}{6-\sqrt{5}}$

(Q.10) If P is a prime number, then

(a) $\sqrt{P}$ is not a rational number (b) $\sqrt{P}$ is not an irrational number

(c) $\sqrt{P}$ is an integer (d) $\sqrt{P}$ is whole number

(Q.11) $\frac{961}{625}$ is a

(a) terminating decimal (b) non-terminating decimal

(c) cannot be determined (d) none of these

(Q.12) The two irrational numbers between $\sqrt{2}$ and $\sqrt{3}$ are

(a) $2^{\frac{1}{3}}, 6^{\frac{1}{4}}$ (b) $3^{\frac{1}{4}}, 3^{\frac{1}{6}}$ (c) $6^{\frac{1}{4}}, 3^{\frac{1}{3}}$ (d) none

(Q.13) If $\sqrt{6}$ = 2.449 then the value of $\frac{3\sqrt{2}}{2\sqrt{3}}$ is close to

(a) 1.225 (b) 0.816 (c) 0.613 (d) 2.449

(Q.14) The multipication of a rational and an irrational number is

(a) an irrational number (b) a rational number

(c) an integer (d) a whole number

(Q.15) Three men start together to travel the same way around a circular track of 11 kms. Their speeds are 4, $5\frac{1}{2}$, and 8 kms per hour respectively. When will they meet at the starting point?

(a) 22 hrs (b) 12 hrs (c) 11 hrs (d) 44 hrs

(Q.16) For three positive integers p, q and r which of the following statement is

true?

(a) L.C.M (p,q, r) $= \frac{p \times q \times r}{H.C.F(p, q, r)}$

(b) L.C.M. (p,q,r) × H.C.F (p, q, r) $= \frac{p \times q \times r}{H.C.F(p, q) HCF(q, r) HCF(r, p)}$

(c) L.C.M (p,q,r) $= \frac{p \times q \times r \times HCF(p, q, r)}{HCF(p, q) \times HCF(q, r) \times HCF(r, p)}$

(d) L.C.M (p,q,r) $= \frac{p \times q \times r}{r \times HCF(p, q) + q \times HCF(p, r) + p \times HCF(q, r)}$

(Q.17) The L.C.M. of two numbers is 45 times their H.C.F. If one of the numbers is 125 and the sum of H.C.F. and L.C.M. is 1150, the other number is:

(a) 215 (b) 220 (c) 225 (d) 235

(Q.18) Suppose you have 108 green marbles and 144 red marbles. You decide to separate them into packages of equal number of marbles. Find the maximum possible number of marbles in each package.

(a) 4 (b) 36 (c) 9 (d) 12

(Q.19) Find the greatest number that will divide 55, 127 and 175, so as to leave the same remainder in each case.

(a) 11 (b) 16 (c) 18 (d) 24

(Q.20) A man was engaged for a certain number of days for Rs. 404.30 but because of being absent for some days he was paid only Rs. 279.90. His daily wages cannot exceed by:

(a) Rs. 29.10 p (b) Rs. 31.30 p (c) Rs. 31.10 p (d) Rs. 31.41 p

(Q.21) The least number of five digits which is exactly divisible by 12, 15 and 18 is:

(a) 10010 (b) 10051 (c) 10020 (d) 10080

(Q.22) Find the greatest possible rate at which a man should walk to cover a distance of 70 km and 245 km in exact number of days?

(a) 55 (b) 60 (c) 35 (d) 45

(Q.23) Three bells chime at an interval of 18, 24 and 32 minutes respectively. At a certain time they begin to chime together. What length of time will elapse before they chime together again? 9873444080

(a) 2 hours 24 minutes (b) 4 hours 48 minutes (c) 1 hour 36 minutes (d) 5 hours

(Q.24) 2525 is

(a) a composite number (b) a natural number (c) an irrational number (d) both (1) & (2)

(Q.25) The length, breadth and height of a room are 8 m 25cm, 6m 75cm and 7m 50cm respectively. Determine the longest tape, which can measure the three dimensions of the room exactly.

(a) 75 cm (b) 150 cm (c) 90 cm (d) 180 cm

(Q.26) H.C.F of 3638 and 3587 is

(a) 13 (b) 17 (c) 19 (d) 23

(Q.27) Find the greatest number, which divides 1442 and 1803 leaving remainder 2 and 3 respectively. 9873444080

(a) 90 (b) 180 (c) 360 (d) 720

(Q.28) The length, breadth and height of a room are 8m25cm, 6m75cm and 4m50cmrespectively. Determine the longest rod which can measure the three dimensions of the room exactly 9873444080

(a) 65cm (b) 77cm (c) 75cm (d) 80cm

(Q.29) 3/9 = 3 (T/F)

(Q.30) Why is 7x11x13 + 7 a composite integer.

(Q.31) Without actual division, state whether the $\frac{13}{2^0 \times 5^7}$ is terminating or non terminating rational numbers.

(Q.32) ± 1 divides every non zero integer .(T/F)

(Q.33) If a and b are non- zero integer then a/b = b/a $\Rightarrow$ a $\neq$ b (T/F)

(Q.34) Express 140 in its prime factor.

(Q.35) Determine .875 is terminating or non-terminating.

(Q.36) H.C.F of two integers 26, 91 is 13 what will be its L.C.M.?

(Q.37) If the HCF of 210 and 55 is expressible in the form 210 x 5 + 55y, find y

(a) 19 (b) 15 (c) -19 (d) -21

(Q.38) Find the HCF of 96 & 404 by prime factorization method. Hence, find the LCM

(a) 1000 (b) 9600 (c) 9640 (d) 9696

(Q.39) Find the largest number that will divide 2053 and 967 and leaves a remainder of 5 and 7 respectively.

(a) 128 (b) 54 (c) 256 (d) 64

(Q.40) Explain why 7 x 11 x 13 + 13 and 7 x 6 x 5 x 4 x 3 x 1 + 5 are composite numbers

(a) Product of prime factor (b) Composite No (c) Both of these (d) None of these

(Q.41) Find out HCF of 867 and 255 by using Euclid Division Algorithm

(a) 51 (b) 45 (c) 50 (d) 55

(Q.42) If the sum of two numbers is 95 and the H.C.F. and L.C.M. of these numbers are 5 and 240 respectively, then the sum of the reciprocals of the numbers is equal to:

(a) $\frac{1}{8}$ (b) $\frac{1}{16}$ (c) $\frac{1}{4}$ (d) none

(Q.43) Find out HCF of 38,220 and 196 by using Euclid Division Algorithm

(a) 192 (b) 190 (c) 196 (d) 198

(Q.44) $\sqrt{2}$ is an irrational or rational number used by contradiction method.

(a) Rational (b) Irrational (c) Both of these (d) None of these

(Q.45) Which of the following is non terminating repeating decimals?

(a) $\frac{13}{3125}$ (b) $\frac{17}{8}$ (c) $\frac{64}{455}$ (d) $\frac{129}{2^2 5^7 7^5}$

(Q.46) Find the greatest number of 6 digits exactly divisible by 24, 15 and 36

(a) 999999 (b) 999789 (c) 999000 (d) 999720

(Q.47) Find the HCF and LCM of 90 and 144 by the prime factorization method

(a) 15, 20 (b) 15, 720 (c) 18, 720 (d) None of these

(Q.48) Find the H.C.F and L.C.M. of 25152 and 12156 by using the fundamental theorem of Arithmetic

(a) 24457576 (b) 25478976 (c) 25478679 (d) 24456567

(Q.49) Find the largest number which divides 245 and 1029 leaving remainder 5 in each case.

(a) 48 (b) 64 (c) 20 (d) 16

(Q.50) $\frac{161}{256}$ is a

(a) Terminating decimal (b) Non-terminating decimal (c) Cannot be determined (d) None of these

(Q.51) Find the HCF of 65 and 117 and express it in the form 65m + 117n

(a) m = -2 , n = -1 (b) m = 2 , n = -1 (c) m = 3 , n = -1 (d) m = 2 , n = 1

(Q.52) Given H.C.F (306, 657) = 9, find L.C.M. (306, 637)

(a) 22222 (b) 22328 (c) 22302 (d) 22338

(Q.53) In a seminar, the number of participants in Hindi, English and Mathematics are 60, 84 and 108 respectively. Find the maximum number of rooms required if in each room the same number of participants are to be seated and all of them being in the same subject. 9911194794

(a) 17 (b) 21 (c) 27 (d) 19

(Q.54) There is a circular path around a sports field. Priya takes 18 minutes to drive one round of the field, while Ravish takes 12 minutes for the same. Suppose they both start at the same point and at the same time, and go in the same direction. After how many minutes will they meet again at the starting point

(a) 30 (b) 36 (c) 40 (d) 26

(Q.55) Two tankers contain 850 litres and 680 litres of petrol respectively. Find the maximum capacity of container which can measure the petrol of either tanker in exact number of times.

(a) 135 (b) 160 (c) 170 (d) 210

(Q.56) Find the HCF of 96 and 404 by prime factorization method. Hence, find thereLCM 9911194794

(a) 9595 (b) 9696 (c) 9292 (d) 9393

(Q.57) In a school there are two sections – section A and section B of classX. There are 32 students in section A and 36 students in section B. Determine the minimum number of books required for their class library so that they can be distributed equally among students of section A or section B

(a) 300 (b) 296 (c) 288 (d) 278

(Q.58) Show that $3\sqrt{2}$ is irrational. (3 Marks)

(Q.59) Show that $5 - \sqrt{3}$ is irrational. (3 Marks)

(Q.60) $\sqrt{2}$ is irrational. (3 Marks)

(Q.61) Express 32760 as the product of its prime factors. (3 Marks)

(Q.62) Find the HCF and LCM of 6, 72 and 120, using the prime factorisation method. 9911194794 (3 Marks)

(Q.63) Find the HCF of 96 and 404 by the prime factorisation method. Hence, find their LCM. (3 Marks)

(Q.64) Find the LCM and HCF of 6 and 20 by the prime factorisation method. (3 Marks)

(Q.65) A sweet seller has 420 kaju barfis and 130 badam barfis. She wants to stack them in such a way that each stack has the same number, and they take up the least area of the tray. What is the maximum number of barfis that can be placed in each stack for this purpose? 9911194794 (3 Marks)

(Q.66) Show that any positive odd integer is of the form 4q + 1 or 4q + 3, where q is some integer. 9911194794 (3 Marks)