CLASS X: REAL NUMBERS PYQs

Question 1. The decimal expansion of the rational number 432453 will terminate after how many places of decimals? (2013)

Question 2 Find the largest number that will divide 398, 436 and 542 leaving remainders 7, 11, and 15 respectively.

Question 3. If the HCF of 408 and 1032 is expressible in the form $1032 \times 2 + 408 \times p$, then find the value of p.

Question 4. HCF and LCM of two numbers is 9 and 459 respectively. If one of the numbers is 27, find the other number. (2012)

Question 5. Find LCM of numbers whose prime factorisation are expressible as 3×5^2 and $3^2 \times 7^2$. (2014)

Question 6. Find the HCF (865, 255) using Euclid's division lemma. (2013)

Question 7. Find the largest number which divides 70 and 125 leaving remainder 5 and 8 respectively. (2015)

Question 8. Find the prime factorisation of the denominator of rational number expressed as $6.\overline{12}$ in simplest form. (2014)

Question 9. Complete the following factor tree and find the composite number x. (2014)
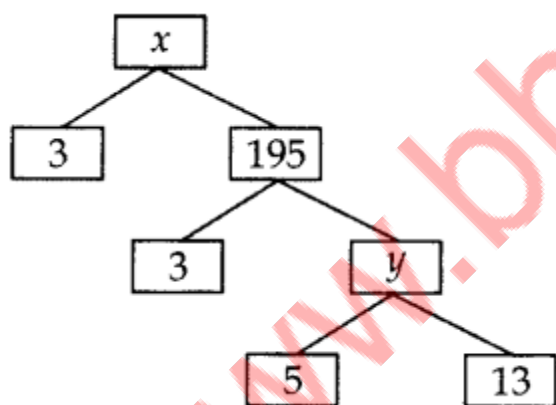
Question 10. Prove that $2 + 3\sqrt{5}$ is an irrational number. (2014)

Question 11. Show that $3\sqrt{7}$ is an irrational number. (2016)

Question 12. Explain why $(17 \times 5 \times 11 \times 3 \times 2 + 2 \times 11)$ is a composite number? (2015)

Question 13. Check whether 4n can end with the digit 0 for any natural number n. (2015)

Question 14. Can two numbers have 15 as their HCF and 175 as their LCM? Give reasons. (2017 OD)

Question 15. Prove that √5 is irrational and hence show that 3 + √5 is also irrational. (2012)

Question 16. Prove that 3 + 2√3 is an irrational number. (2014)

Question 17. Three bells toll at intervals of 9, 12, 15 minutes respectively. If they start tolling together, after what time will they next toll together? (2013)

Question 18. Two tankers contain 850 liters and 680 liters of petrol. Find the maximum capacity of a container which can measure the petrol of each tanker in the exact number of times. (2012)

Question 19. The length, breadth, and height of a room are 8 m 50 cm, 6 m 25 cm and 4 m 75 cm respectively. Find the length of the longest rod that can measure the dimensions of the room exactly. (2015)

Question 20. Three alarm clocks ring at intervals of 4, 12 and 20 minutes respectively. If they start ringing together, after how much time will they next ring together? (2015)

Question 21. In a school, there are two Sections A and B of class X. There are 48 students in Section A and 60 students in Section B. Determine the least number of books required for the library of the school so that the books can be distributed equally among all students of each Section. (2017 OD)

Question 22. By using Euclid's algorithm, find the largest number which divides 650 and 1170. (2017 OD).

Question 23. Find the HCF of 255 and 867 by Euclid's division algorithm. (2014)

Question 24. Using Euclid's division algorithm, find whether the pair of numbers 847, 2160 are coprime or not.

Question 25. There are 104 students in class X and 96 students in class IX in a school. In a house examination, the students are to be evenly seated in parallel rows such that no two adjacent rows are of the same class. (2013)
(a) Find the maximum number of parallel rows of each class for the seating arrange¬ment.
(b) Also, find the number of students of class IX and also of class X in a row.
(c) What is the objective of the school administration behind such an arrangement?

Question 26. Dudhnath has two vessels containing 720 ml and 405 ml of milk respectively. Milk from these containers is poured into glasses of equal capacity to their brim. Find the minimum number of glasses that can be filled. (2014)

Question 27. Amita, Sneha, and Raghav start preparing cards for all persons of an old age home. In order to complete one card, they take 10, 16 and 20 minutes respectively. If all of them started together, after what time will they start preparing a new card together? (2013)

Question 28. Find HCF of numbers 134791, 6341 and 6339 by Euclid's division algorithm. (2015)

Question 29. If two positive integers x and y are expressible in terms of primes as x = p^2q^3 and y = p^3q, what can you say about their LCM and HCF. Is LCM a multiple of HCF? Explain. (2014)

Question 30. Show that one and only one out of n, (n + 1) and (n + 2) is divisible by 3, where n is any positive integer. (2015)

Question 31. Show that any positive odd integer is of the form 41 + 1 or 4q + 3 where q is a positive integer. (2016 OD)