6th – Playing with Numbers II

Factors and multiplies:

1. What are the factors of the following?

(a) 12 (b) 25 (c) 16 (d) 24 (e) 288 (f) 350

2. Write down the multiples of the following numbers between 55 and 105.
3. Write the factors of the following:

a) 10 (b) 15 (c) 20 (d) 25 (e) 30 (f) 40

4. State which of these are multiplies of 2.

(a) 72 (b) 81 (c) 896 (d) 6731 (e) 4236 (f) 7162

5. States which of these are multiplies of 10.

(a) 670 (b) 6432 (c) 8901 (d) 84390 (e) 713 (f) 40

6. List the first five multiples of:

a) 19 b) 23 c) 34 d) 17 e) 26 f) 32

Prime and composite numbers

7. How many prime numbers exist between

(a) 1 and 10 (b) 1 and 20 (c) 20 and 40 (d) 40 and 80 (e) 80 and 100

8. Find out the prime numbers from the following numbers.

(a) 141 (b) 181 (c) 177 (d) 184 (e) 169

9. Which of the following pair of numbers are co-prime numbers?

(a) 52 and 81 (b) 294 and 256 (c) 88 and 187 (d) 675 and 392

10. Write down the first ten prime numbers.
11. Write down the prime numbers between:

a) 50 and 110 b) 60 and 100 c) 14 and 50

12. List all the multiples of 15 between 50 to 100.
13. Between which multiples of 10 does 3688 lie.
14. Write any four pairs of twin primes.
15. The smallest prime numbers is _____
16. 1 is neither _____ not composite.
17. The smallest odd composite number is _____
18. Greatest 2 digit prime number is _____

Prime Factorisation: When a number is expressed as a product of its factors we say that the number has been factorised. Example: The prime factorisation of 24=2×2×2×3, the prime factorisation of 36=2×2×3×3

19. **Find the prime factorization of :**

1. 980 2. 60 3. 1000 4. 450 5. 1500 6. 7200
7. 78 8. 120 9. 256 10. 84 11. 441 12. 244

20. Write the greatest 4-digit number and express it in terms of its prime factors.
21. Write the smallest 5-digit number and express it in the form of its prime factors.
22. Find all the prime factors of 1729 and arrange them in ascending order. Now state the relation, if any between two consecutive prime factors.
23. Express each of the following numbers as sum of two odd primes:

a) 18 b) 66 c) 90 d) 36

24. Express each of the following as sum of three odd primes:

a) 23 c) 21 c) 59 d) 61

Highest Common Factor (HCF): The highest common factor (HCF) of two or more given numbers is the highest of their common divisor.

Example: HCF of 20, 28, 36

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20=2×2×5
28=2×2×7
36=2×2×3×3
The common factor of 20, 28, 36 is 2. Thus HCF of 20, 28, 36 is 2 × 2 = 4

25. Find the HCF of the following numbers by prime factorization method and factor method:

a) 27, 63	b) 36,84	c) 70,105,175	d) 12,45,75
e) 27 and 36	f) 15, 52, 65	g) 42, 54, 64	h) 12, 24, 88

26. Find the HCF of 204, 144 and 252.

Lowest Common Multiple (LCM): The lowest common multiple of two or more given numbers is the lowest of their common multiples. Example: LCM of 12 and 18
12=2×2×3
18=2×3×3
The LCM of 12 and 18=2×2×3×3=36

27. Find the LCM of the following by listing their multiples and prime factorization:

a) 24 and 90	b) 40,48 and 45	c) 12 and 36	d) 20,25 and 30
e) 11 and 4	f) 24, 15, 45	g) 30, 45, 60	h) 25, 30, 40

Statements Sums involving HCF and LCM:

28. In a morning walk, three persons step off together. Their steps measure 80 cm, 85 cm and 90 cm respectively. What is the minimum distance each should walk so that all can cover the same distance in complete steps?
29. Three tankers contain 403 litres, 434 liters and 465 liters of diesel respectively. Find the maximum capacity of a container that can measure the diesel of the three containers exact number of times.
30. Find the greatest number which when divides 259 and 465 leaves remainder 4 and 6 respectively.
31. Find the least number which when divided by 6, 14, 18 and 22 leaves remainder 4 in each case.
32. How often will five bells ring together on one hour if they start together and ring at intervals of 5, 6, 8, 12, 20 seconds respectively?
33. Find the largest number that divides 92 and 74 leaving 2 as remainder.
34. Find the smallest number which, on being added 23 to it, is exactly divisible by 32, 36, 48 and 96.
35. Find the least length of a rope which can be cut into whole number of pieces of lengths 45 cm, 75 cm and 81 cm.

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