Multiple, Factors and Prime factorise

Even Numbers: Numbers which are divisible by 2 without any remainder. E.g. 2,8,18, 400...etc. (Hints: Numbers ends with 0,2,4,6 or 8)

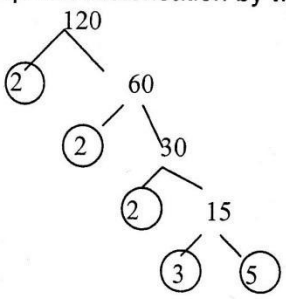
Odd Numbers: Numbers which are not exactly divisible by 2. E.g.: 1, 5, 99.etc. (Hints: Numbers ends with 1, 3, 5,7or 9)

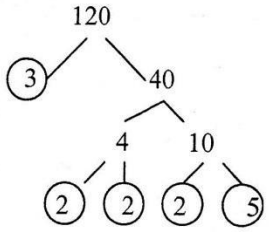
Prime Numbers: Numbers which have only 2 factors 1 and itself only. E.g.: 2,3,5,17,71. (Hints: Numbers less than 120 and greater then 10 all prime ends with 1,3,7,9 and not the multiple of 3 and 7)

Factors: Such numbers which divides the given number exactly. E.g. Factors of 30 are {1,2,3,5,6,10,15,30} (Hints: 1 and itself are always factors)

Multiple: Numbers which are exactly divisible by the given number. E.g. Multiple of 7 are 7, 14, 21…77. (Hints: Number in times table)

Prime factorisation: Expressing numbers in the product of prime. E.g. 120= 2x2x2x3x5
(Hints: All numbers must be prime)
We can do prime factorisation by two method a) Factor tree method





b) Division method.

2	120
2	60
2	30
3	15
	5

120 = 2x2x2x3x5

Test of Divisibility

2: All even numbers are divisible by 2.
3: Sum of all individual numbers must be multiple of 3.
5: Numbers which end with either 5 or 0
6: Even numbers which sum is multiple of 3
11: Alternate sign operation is zero. E.g. 86867
(8-6+8-6+7=11→1-1=0) Hence 86867 is the multiple of 11.

Exercise:

Factorize the following numbers into product of prime factors:

e.g. $120 = 2^3 \times 3 \times 5$

1. 45 _____
2. 48 _____
3. 64 _____
4. 144 _____
5. 180 _____
6. 200 _____
7. 240 _____
8. 360 _____
9. 540 _____
10. 625 _____

Write the first 10 multiple of the following numbers.

11. 5 _____
12. 7 _____
13. 9 _____
14. 11 _____
15. 12 _____

Write the factors of the following numbers.

16. 17 _____

17. 24 _____

18. 25 _____

19. 36 _____

20. 48 _____

Factories the following numbers by factor tree number.

21. 75 _____

22. 100 _____

23. 360 _____

24 560 _____

25. 720 _____

Here is the list of numbers.

12, 6, 64, 7, 21, 28, 18

26. Write the prime number. _____

27. Factors of 24. _____, _____

28. Multiples of 7 ____, ____, ____

29. Two number that add up to 40. _____, _____

30. Square number _____

31. Multiple of 6 ____, ____, ____

32. Two number with difference 10 _____, _____

33. Factor of 18 _____

34. Odd numbers _____ , _____

35. Cube number _____