- Even numbers (偶数) = are divisible by 2 (2,4,6,8,10,.......)
- Odd numbers (奇数) = are not divisible by 2 (1,3,5,7,9,......)

Factors (因数) and Multiples (倍数)

例题 1：   30 = 1 x 30
             = 2 x 15
             = 3 x 10
             = 5 x 6

      ★ **1，2，3，5，6，10，15，30 are factors of 30.**
      ★ **Conversely, 30 are multiple of 1，2，3，5，6，10，15，30.**
      ★ **The smallest factor always = 1**
      ★ **The largest factor always = the number itself (i.e.30)**
      ★ **The smallest multiple always = the number itself (i.e.30)**

例题 2：   List the factors of 23.

      Solution: 23 = 1 x 23
           ➢ The factors of 23 are 1 and 23.

例题 3：   List the multiple of 5.

      Solution: The multiples of 5 are 5,10,15,20,25,30,......

例题 4：   Determine whether 8 is a factor of 104.

      Solution: 104 ÷ 8 = 13
           ➢ 104 is divisible by 8
           ➢ 8 is a factor of 104

Prime Numbers (质数) and Composite Numbers (合数)

- Prime Numbers = ONLY 2 different factors (1 and the number itself)
                   = 只能被1 及它本身整除
                     ➢ 2 = 1 x 2
                     ➢ 3 = 1 x 3
                     ➢ 5 = 1 x 5
                     ➢ 2,3,5 are PRIME NUMBERS.

- Composite Numbers = MORE than 2 different factors
  = 除了1及它本身，还能被其他自然数整除
  - 4 = 1 x 4
    = 2 x 2
  - 1,2 and 4 are factors of 4.
  - 4 is COMPOSITE NUMBER.
  - **Number 1 is neither a prime number nor a composite number.**

Prime Factors (质因数)

- Prime Factors = The factor of a number is prime number.
  例题 5：The factors of 12 are 1,2,3,4,6,12
  - 2 and 3 are prime numbers, so we called it prime factors.

- Index Notation
  a^n ←a = Base
  ←n = Index
  ←**read as a to the power of n**

  例题 6：   Express the following using index notation.
      Solution: 7 x 7 = 7^2 (read as square of 7)
      Solution: 2 x 2 x 2 = 2^3 (read as cube of 2)

  例题 7：   Find the prime factors of 12.
      Solution: 2) 1 2
                   2)   6
                        3
  - 2 and 3 are prime factors of 12.

  例题 8：   Factorize 30 into prime factors.
      Solution: 2) 3 0
                   3) 1 5
                        5
  - 30 = 2 x 3 x 5

  例题 9：   Express 28 as a product of prime factors using index notation.
      Solution: 2) 2 8
                   2) 1 4
                        7
  - 28 = 2^2 x 7

Highest Common Factor (HCF) (最大公因数)

例题 10： Find the HCF of 36 and 90.

Solution:
2) 3 6 , 9 0
3) 1 8 , 4 5
3) 6 , 1 5
2 , 5

➢ The HCF of 36 and 90 = 2 x 3 x 3
= 18

例题 11： Find the HCF of 12 and 35.

Solution:
1) 1 2 , 3 5
1 2 , 3 5

➢ The HCF of 12 and 35 = 1 (called as coprime numbers)

Lowest Common Multiple (最小公倍数)

例题 12： Find the LCM of 30 and 36.

Solution:
2) 3 0 , 3 6
3) 1 5 , 1 8
5) 5 , 6
6) 1 , 6
1 , 1

➢ LCM OF 30 AND 36 = 2 x 3 x 5 x 6
= 180