Example 8: Express the following numbers in standard form.

- (i) 0.000035
- (ii) 4050000

- **Solution:** (i) $0.000035 = 3.5 \times 10^{-5}$
- $4050000 = 4.05 \times 10^{6}$

Example 9: Express the following numbers in usual form.

- (i) 3.52×10^5
- (ii) 7.54×10^{-4}
- (iii) 3 × 10-3

Solution:

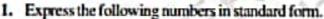
(i)
$$3.52 \times 10^3 = 3.52 \times 100000 = 352000$$

(ii)
$$7.54 \times 10^{-4} = \frac{7.54}{10^4} = \frac{7.54}{10000} = 0.000754$$

(iii)
$$3 \times 10^{-3} = \frac{3}{10^5} = \frac{3}{100000} = 0.00003$$

Again we need to convert numbers in standard form into a numbers with the same exponents.

EXERCISE 12.2



0.00000000000085

- (ii) 0.000000000000942
- (iii) 60200000000000000
- (iv) 0.00000000837

- (v) 31860000000
- Express the following numbers in usual form.
 - (i) 3.02 × 10⁻⁶ (ii) 4.5 × 10⁴
- (iii) 3 × 10-1

- (iv) 1.0001 × 10"
- (v) 5.8 x 1012
- (vi) 3.61492 x 106
- Express the number appearing in the following statements in standard form.
 - (i) I micron is equal to 1000000 m.
 - (ii) Charge of an electron is 0.000,000,000,000,000,000,16 coulomb.
 - (iii) Size of a bacteria is 0.0000005 m
 - (iv) Size of a plant cell is 0.00001275 m
 - (v) Thickness of a thick paper is 0.07 mm
- 4. In a stack there are 5 books each of thickness 20mm and 5 paper sheets each of thickness 0.016 mm. What is the total thickness of the stack.

WHAT HAVE WE DISCUSSED?

- 1. Numbers with negative exponents obey the following laws of exponents.
 - (a) a" × a" = a""
- (b) $a^{-} \div a^{*} = a^{*-}$
- (c) $(a^m)^n = a^{mn}$

- (d) $a^{-} \times b^{-} = (ab)^{-}$
- (e) $a^0 = 1$

- Very small numbers can be expressed in standard form using negative exponents.