Exercise – 4(A)

(1) (i) $7 = 7 \times 7 \times 7 = 343$

(ii) $11 = 11 \times 11 \times 11 = 1331$

(iii) $16 = 16 \times 16 \times 16 = 4096$

(iv) $23 = 23 \times 23 \times 23 = 12167$

(v) $31 = 31 \times 31 \times 31 = 29791$

(vi) $42 = 42 \times 42 \times 42 = 74088$

(vii) $54 = 54 \times 54 \times 54 = 157464$

31	42	54
×31	×42	×54
+31	+84	+216
93	168	270
961	1764	2916
×31	×42	×54
+961	3528	14580
29791	70560	157464
	74088	

(2) (i) 243

Factors = $3 \times 3 \times 3 \times 3 \times 3$

3	243
3	81
3	27
3	9
3	3
	1

∴ 243 is not a perfect cube.

(ii) 588

Factors = $2 \times 2 \times 7 \times 7 \times 3$

2	588
2	294
7	147
7	21
3	3
	1

Since triplet of any no. can't be founded

∴ 588 is not a perfect cube.

(iii) 1331

Factors = $11 \times 11 \times 11 = 11^3$

$\therefore$ 1331 is a perfect cube.

11	1331
11	121
11	11
	1

(iv) 24000

Factors = $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 3$

Triplet of 3 can't be formed.

$\therefore$ 24000 is not a perfect cube.

3	24000
2	8000
2	4000
2	2000
2	1000
5	500
2	100
5	50
5	10
2	5
5	1

(v) 1728

Factors = $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3$

$= (3 \times 2 \times 2)(3 \times 2 \times 2)(3 \times 2 \times 2)$

$= 12 \times 12 \times 12$

$= 12^3$

$\therefore$ 1728 is a perfect cube.

2	1728
2	864
2	432
2	216
2	108
2	54
3	27
3	9
3	3

(vi) 1938

Factors = $2 \times 3 \times 323$

$\therefore$ 1938 is not a perfect cube.

2	1938
3	969
	323

3) (i) $2 \cdot 1 = 9 \cdot 261$

(ii) $0 \cdot 4 = 0 \cdot 064$

(iii) $1 \cdot 6 = 4 \cdot 096$

(iv) $2 \cdot 5 = 15 \cdot 625$

4) (i) $\frac{3}{7} = \frac{3 \times 3 \times 3}{7 \times 7 \times 7} = \frac{27}{343}$

(ii) $\frac{8}{9} = \frac{8 \times 8 \times 8}{9 \times 9 \times 9} = \frac{512}{729}$

(iii) $\frac{10}{13} = \frac{10 \times 10 \times 10}{13 \times 13 \times 13} = \frac{1000}{2197}$

$13 \times 13 = 169$

$169 \times 13 = 507 + 1690 = 2197$

$343 = 7 \times 7 \times 7$

$2 \cdot 1 \times 2 \cdot 1 = 4 \cdot 41$

$4 \cdot 41 \times 2 \cdot 1 = 9 \cdot 261$

$64 \times 8 = 512$

5) (i) $-3 = -3 \times -3 \times -3 = -27$

(ii) $-7 = -7 \times -7 \times -7 = -329$

(iii) $-12 = -12 \times -12 \times -12 = -1728$

(iv) $-18 = -18 \times -18 \times -18 = -5832$

(v) $-25 = -25 \times -25 \times -25 = -15625$

(vi) $-30 = -30 \times -30 \times -30 = -27000$

(vii) $-50 = -50 \times -50 \times -50 = -1,25,000$