Exercise 4(A)

1. Find the cube of:

i) $7 = 7^3$
$= 7 \times 7 \times 7 = 343$

ii) $11 = 11^3$
$= 11 \times 11 \times 11 = 1331$

iii) $16 = 16^3$
$= 16 \times 16 \times 16 = \cancel{3296}$ 4096

vii) $54 = 54^3$
$= 54 \times 54 \times 54 = 157464$

iv) $23 = 23^3$
$= 23 \times 23 \times 23 = 12167$

v) $31 = 31^3$
$= 31 \times 31 \times 31 = 29791$

vi) $42 = 42^3$
$= 42 \times 42 \times 42 = 74088$

2. Find which of the following are perfect cubes?

i) $243 = 3|243$
$3|81$
$3|27$
$3|9$
3

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

$\therefore$ 243 is not a perfect square

ii) 588

$= (2 \times 2 \times 3) \times 61$

2	588
2	294
2	147
	61

Since, Triplet of number 61 is not formed.

∴ 588 is not a perfect square.

iv) 24000

$= (2 \times 2 \times 2) \times (2 \times 2 \times 2) \times 3 \times 5 \times 37$

2	24000
2	12000
2	6000
2	3000
2	1500
2	750
5	375
5	75
	15
	3

Since, Triplet of number 5, 37 and 2 are not formed.

∴ 24000 is not a perfect square.

v) 1728

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

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

Since, Triplet of number 2 and 3 are not formed.

∴ 1728 is not a perfect square.

vi) 1938

$= 2 \times 3 \times 323$

2	1938
3	969
	323

Here, The Triplet of number 2, 3 and 323 are not formed.

∴ 1938 is not a perfect square.

3) Find the cubes of :

i) $2.1 = (2.1)^3$

$= 2.1 \times 2.1 \times 2.1$

$= 9.261$

ii) $0.4 = (0.4)^3$

$= 0.4 \times 0.4 \times 0.4$

$= 0.064$

iii) $1.6 = (1.6)^3$

$= 1.6 \times 1.6 \times 1.6$

$= 4.096$

iv) $2.5 = (2.5)^3$

$= 2.5 \times 2.5 \times 2.5$

$= 15.625$

v) $0.12 = (0.12)^3$

$= 0.12 \times 0.12 \times 0.12$

$= 0.001728$

vi) $0.02 = (0.02)^3$

$= 0.02 \times 0.02 \times 0.02$

$= 0.000008$

vii) $0.8 = (0.8)^3$

$= 0.8 \times 0.8 \times 0.8$

$= 0.512$

4) Find the cubes of :

i) $\left(\frac{3}{7}\right)^3 = \frac{3^3}{7^3} = \frac{3 \times 3 \times 3}{7 \times 7 \times 7} = \frac{27}{21}$

ii) $\frac{8}{9} = \left(\frac{8}{9}\right)^3 = \frac{8^3}{9^3} = \frac{8 \times 8 \times 8}{9 \times 9 \times 9}$

$= \frac{512}{243}$

iii) $\frac{10}{13} = \left(\frac{10}{13}\right)^3 = \frac{10^3}{13^3} = \frac{10 \times 10 \times 10}{13 \times 13 \times 13}$

$= \frac{1000}{2097}$

iv) $1\frac{2}{7} = \left(\frac{9}{7}\right)^3$

$\frac{9 \times 9 \times 9}{7 \times 7 \times 7} = \frac{9^3}{7^3} = \frac{243}{147}$

v) $2\frac{1}{2} = \left(\frac{5}{2}\right)^3$

$= \frac{5^3}{2^3} = \frac{125}{8} \quad \frac{5 \times 5 \times 5}{2 \times 2 \times 2}$

$= \frac{125}{8} = 15\frac{5}{8}$

5. Find the cubes of :

i) $-3 = (-3)^3$

$= (-3) \times (-3) \times (-3)$

$= -27$

ii) $-7 = (-7)^3$

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

$= -343$

i iii) $-12, (-12)^3$

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

$= -1728$

iv) $-18, (-18)^3$

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

$= -5832$

v) $-25, (-25)^3$

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

$= -15,625$

vi) $-30, (-30)^3$

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

$= -27000$

vii) $-50, (-50)^3$

$= (-50) \times (-50) \times (-50)$

$= -125000$

6.

2	216
2	108
2	54
3	27
3	9
	3

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

$= 2^3 \times 3^3 = 6^3 = 6 \times 6 \times 6$

$= 216$

3	729
3	243
3	81
3	27
3	9
	3

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

$= 3^3 \times 3^3 = 9^3 = 9 \times 9 \times 9$

$= 729$

5	3375
5	675
5	135
3	27
3	9
	3

$= 5 \times 5 \times 5 \times 3 \times 3 \times 3$

$= 5^3 \times 3^3, \ 15^3 = 15 \times 15 \times 15$

$= 3375$