CW

Ch-4

Ex-4(A)

1. a) $7 = 7 \times 7 \times 7 = 343$

b) $11 = 11 \times 11 \times 11 = 1331$

c) $16 = 16 \times 16 \times 16 = 4096$

d) $23 = 23 \times 23 \times 23 = 12167$

e) $31 = 31 \times 31 \times 31 = 29791$

f) $42 = 42 \times 42 \times 42 = 74088$

g) $54 = 54 \times 54 \times 54 = 157464$

2. a) 243 = No, it is not a perfect cube.

=

3	243
3	81
3	27
3	9
	3

$243 = (3 \times 3 \times 3) \times 3 \times 3$

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

b) 588 = No, it is not a perfect cube.

=

2	588
2	294
7	147
7	21
	3

$588 = (2 \times 2) \times (7 \times 7) \times 3$

$= 2^2 \times 7^2 \times 3$

c) 1331 = Yes, it is a perfect cube.

=

11	1331
11	121
	11

$1331 = 11 \times 11 \times 11$

$= 11^3$

d) 24000 = No, it is not a perfect cube.

=

2	24000
2	12000
2	6000
2	3000
2	1500
2	750
3	375
5	125
5	25
	5

$24000 = (2\times2\times2)\times(2\times2\times2)\times3\times(5\times5\times5)$

$= 2^3 \times 2^3 \times 5^3 \times 3$

e) 1728 = Yes, it is a perfect cube.

=

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

$1728 = (2\times2\times2)\times(2\times2\times2)\times(3\times3\times3)$

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

b) 1938 = No, it is not a perfect cube.

=

2	1938
3	936
17	323
	19

$1938 = 2\times3\times17\times19$

3. a) 2.1

$= (2.1)^3 = \left(\frac{21}{10}\right)^3$

$= \frac{21 \times 21 \times 21}{10 \times 10 \times 10}$

$= \frac{9261}{1000} = 9.261$

b) 0.4

$= (0.4)^3 = \left(\frac{4}{10}\right)^3$

$= \frac{4 \times 4 \times 4}{10 \times 10 \times 10}$

$= \frac{64}{1000} = 0.064$

c) 1.6

$= (1.6)^3 = \left(\frac{16}{10}\right)^3$

$= \frac{16 \times 16 \times 16}{10 \times 10 \times 10}$

$= \frac{4096}{1000} = 4.096$

d) 2.5

$= (2.5)^3 = \left(\frac{25}{10}\right)^3$

$= \frac{25 \times 25 \times 25}{10 \times 10 \times 10}$

$= \frac{15625}{1000} = 15.625$

e) 0.12

$= (0.12)^3 = \left(\frac{12}{100}\right)^3$

$= \frac{12 \times 12 \times 12}{100 \times 100 \times 100}$

$= \frac{1728}{1000000} = 0.001728$

f) 0.02

$= (0.02)^3 = \left(\frac{2}{100}\right)^3$

$= \frac{2 \times 2 \times 2}{100 \times 100 \times 100}$

$= \frac{8}{1000000} = 0.000008$

g) 0.08

$= (0.08) = \left(\frac{8}{100}\right)^3$

$= \frac{8 \times 8 \times 8}{10 \times 10 \times 10}$

$= \frac{512}{1000} = 0.512$

4.a) $\frac{3}{7}$

$= \left(\frac{3}{7}\right)^3 = \frac{3\times3\times3}{7\times7\times7}$

$= \frac{27}{343}$

b) $\frac{8}{9}$

$= \left(\frac{8}{9}\right)^3 = \frac{8\times8\times8}{9\times9\times9}$

$= \frac{512}{729}$

c) $\frac{10}{13}$

$= \left(\frac{10}{13}\right)^3 = \frac{10\times10\times10}{13\times13\times13}$

$= \frac{1000}{2197}$

d) $1\frac{2}{7}$

$= \left(1\frac{2}{7}\right)^3 = \left(\frac{1\times7+2}{7}\right)^3$

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

$= \frac{9\times9\times9}{7\times7\times7}$

$= \frac{729}{343} = 2\frac{43}{243}$

e) $2\frac{1}{2}$

$= \left(\frac{5}{2}\right)^3 = \frac{5\times5\times5}{2\times2\times2}$

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

5.a) $-3 = -27$

$= (-3)^3$

$= -3\times-3\times-3 = -27$

b) $-7 = -343$

$= (-7)^3$

$= -7\times-7\times-7 = -343$

c) $-12 = -1728$

$= (-12)^3$

$= -12\times-12\times-12 = -1728$

d) $-18 = -5832$

$= (-18)^3$

$= -18\times-18\times-18 = -5832$

e) $-25 = -15625$

$= (-25)^3$

$= -25\times-25\times-25 = -15625$

f) $-30 = -27000$

$= (-30)^3$

$= -30\times-30\times-30 = -27000$

g) $-50 = -125000$

$= (-50)^3$

$= -50\times-50\times-50 = -125000$