1 sec contains 10^6 ms

(i) lgn

lgn means log base 2 Logrithmic function

$\Rightarrow n = a^x$

or

$\log_a n = x$

So

for 1 sec $= 10^6$ ms

$\lg_2 n = 10^6$

or

$\Rightarrow n = 2^{1 \times 10^6}$

for 1 min $= 60 \times 10^6$

$= 6 \times 10^7$

$\lg_2 n = 6 \times 10^7$

or

$\Rightarrow n = 2^{6 \times 10^7}$

for 1 hour $= 60 \times 60 \times 10^6$

$= 36 \times 10^8$

$= 3.6 \times 10^9$

$\lg_2 n = 3.6 \times 10^9$

or

$\Rightarrow n = 2^{3.6 \times 10^9}$

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(ii) $\sqrt{n}$

(a) for 1 sec

$$\sqrt{n} = 10^6$$

taking square on b/sides

$$(\sqrt{n})^2 = (10^6)^2$$

$$\Rightarrow n = 10^{12}$$

(a) for 1 min

$$\sqrt{n} = 60 \times 10^6$$

taking sqr on b/sides

$$(\sqrt{n})^2 = (60 \times 10^6)^2$$

$$= 3600 \times 10^{12}$$

$$\Rightarrow n = 3.6 \times 10^{15}$$

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(iii) n

(a) for 1 sec

$$\Rightarrow n = 10^6$$

(iv) n^2

(a) for 1 sec

$$n^2 = 10^6$$

Taking sq. root on b/sides

$$\sqrt{n^2} = \sqrt{10^6}$$

$$\Rightarrow n = 10^3$$

(vi) n^3

(a) for 1 sec

$$n^3 = 10^6$$

taking cube root on b/sides

$$(n^3)^{1/3} = (10^6)^{1/3}$$

$$\Rightarrow n = 10^2$$

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(vii) 2^n

(a) For 1 sec

$2^n = 10^6$ ∴

taking natural log on b/sides

$\log 2^n = \log 10^6$

$n \log 2 = 6 \log 10$

$n(0.3) = 6$

$n = \frac{6}{0.3}$

$n = 19.13$ ∴

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