20.27. SQUARE ROOT OF N COMPLEXITY.

EXAMPLE 1

$$for(i = 1; i * i \leq n\ ; i = i * 2)\{$$

$$c = c + 1;$$

}

ANSWER

$i * i = i^2$. *Hence* $i^2 \leq n$ *or* $i \leq \sqrt{n}$. *Hence the above loop runs* $\sqrt{n}$ *giving* $O(\sqrt{n})$ *complexity.*

EXAMPLE 2

$$for(i = 1; i \leq sqrt(n)\ ; i = i * 2)\{$$

$$c = c + 1;$$

}

ANSWER

Here directly $sqrt(n)$ *math function is used to make square root of* n.

Hence time complexity is $O(\sqrt{n})$