Program-12

Recursion and Introduction.

Theory:-Recursion is a type of problem-solving used in computer science. It sounds a little abstract at first, but stick with us and we'll explain. It's actually simpler than it sounds!

Recursion is when the solution to a problem uses smaller instances of the problem itself. In programming terms, recursion is when a function calls itself.

Introduction:-
Suppose you want to prove that a statement about an integer n is true for every positive integer n. Define a propositional P(n) is true for all n>=1, do the following steps:
1.Prove that P(1) is true.
2.I inductive Step:Let k>=1 Assume P(k) is true and prove that P(k+1) is true .

Source Code :-

```
def power(a,n):
        if(n==0):
                return 1
        else:
                return a*(power(a,n-1))
```

Output:-

```
Sage: power(2,5)
32
Sage: power(5)
120
```