5. Write a program to find the value of an (where a and n are integers) using both brute-force based algorithm and divide and conquer based algorithm

```
def power_bruteforce(a,n):

    result=1

    for i in range(n):

        result*=a

    return result

def power_divide_conquer(a,n):

    if n==0:

        return 1

    elif n%2==0:

        return power_divide_conquer(a*a,n//2)

    else:

        return a*power_divide_conquer(a*a,n//2)


a,n=map(int,input("Enter the value of a and n: ").split())

result_brute=power_bruteforce(a,n)

result_divide_conquer=power_divide_conquer(a,n)

print("Result using brute force: ",result_brute)

print("Result using divide and conquer: ",result_divide_conquer)
```

Output

```
Enter the value of a and n: 2 5
Result using brute force:  32
Result using divide and conquer:  32
```