

CSE 20
Fall 2021
Quiz 1

Solutions

1. (25 Points) Write a complete Python program that prompts for, and reads two integers n and k from the user, then prints out the value of the expression: $1^k + 2^k + 3^k + \dots + n^k$. For instance, if $n = 5$ and $k = 3$ then $1^3 + 2^3 + 3^3 + 4^3 + 5^3 = 225$ is printed. Your program's interaction with the user in this case would appear as follows.

```
Enter n: 5
Enter k: 3
sum = 225
```

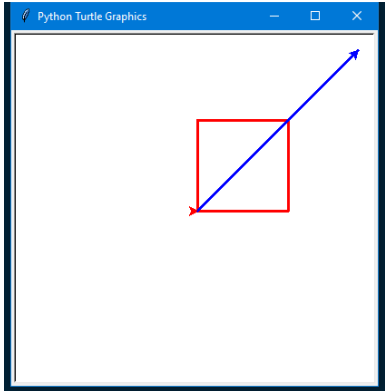
Solution:

```
n = int(input("Enter n: "))
k = int(input("Enter k: "))

s = 0
for i in range(1, n+1):
    s += i**k
# end for

print("sum =", s)
```

2. (25 Points) Complete the Python program below that creates two turtle objects called alice and bob. Alice will draw a red square whose lower left corner is the point (0,0), and whose side length is 100 pixels. Bob will draw a blue line of length 250 starting at (0,0) and passing through the upper right corner of Alice's square. The picture drawn by the resulting program is shown below.



```
import turtle

wn = turtle.Screen()
alice = turtle.Turtle()
bob = turtle.Turtle()

# your code starts here


alice.color("red")
alice.forward(100)
alice.left(90)
alice.forward(100)
alice.left(90)
alice.forward(100)
alice.left(90)
alice.forward(100)
alice.left(90)

bob.color("blue")
bob.left(45)
bob.forward(250)


# your code ends here

wn.mainloop()
```