الاسم: ....   رقم التسجيل: ....

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Instructions: Time **12** min. Open book and notes exam. No electronics. Please answer all problems in the space provided and limit your answer to the space provided. No questions are allowed. There are two problems. Each problem has 2 points.
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P1. Complete the following python program such that the program accepts from the console an input integer n and uses a `while` loop to find the sum of natural numbers up to n.

Example: For input `'4'`, the output should be 10

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

# initialize sum and counter
i = 1

sum = 0
while i <= n:
    sum = sum + i
    i = i+1     # update counter



# print the sum
print("The sum is", sum)
```
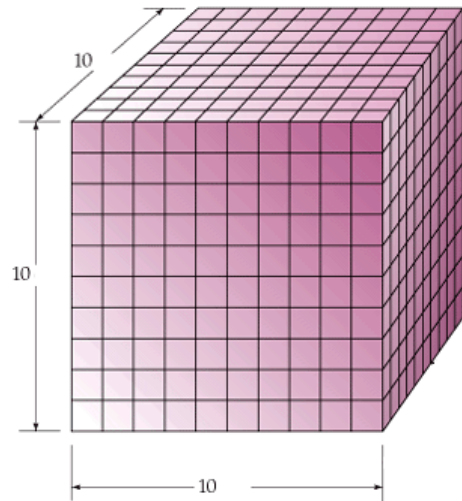
P2. Consider the following Python code that generates a three-dimensional array. This array has 1,000 elements. Imagine that this array is a cube as shown blow. Complete this code to clear the last square of 100 elements in this array, *i.e.*, the elements that have 9 in the first dimension. Then write additional statements to test your work and to print the resulting sum of the entire array.

```python
import numpy as np

np.random.seed(7)
a = np.random.randn(10, 10, 10)
```



```python
a[9] = 0.

print(a[9].sum())

print(a.sum())
```

<Good Luck>