Name(s)________________________________

S-O-L-V-E LAB

Visit each station, in any order, with your partner(s). You may use a calculator to help you work on each.

Check in with the teacher to correct your work before beginning at another station.

S	
O	
L	
V	
E	

S	What is the <u>units</u> digit of 3^{107} ?
O	What is the smallest <u>n</u> for which $1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \ldots + \frac{1}{n} > 3$?
L	Find the smallest positive integer <u>n</u> so that $n^2 - 26n + 30$ is at least 1000.
V	What is the smallest positive integer that you could multiply 180 by, to get an integer that is a perfect cube.
E	Info Dr. Morris placed one bacterium in a closed container on June 1. The number of bacteria doubled every day. The container became full on June 20. Questions Question 1: How many bacteria were in the container when full? Question 2: On what date was the container one-fourth full?

STATION **S**

What is the units digit of 3^{107} ?

STATION **O**

What is the smallest n

for which

$$1 + \frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \ldots + \frac{1}{n} > 3 \text{ ?}$$

STATION **L**

Find the smallest positive integer n so that $n^2 - 26n + 30$ is at least 1000.

STATION **V**

What is the smallest positive integer that you could multiply 180 by, to get an integer that is a perfect cube.

STATION <u>E</u> Info

Dr. Morris placed one bacterium in a closed container on June 1. The number of bacteria doubled every day. The container became full on June 20.

STATION E Questions

Question 1: How many bacteria were in the container when full?

Question 2: On what date was the container one-fourth full?