**Straws and Connectors Worksheet 13a- Growing L -Tower**

**Figure 1 Figure 2 Figure 3**

**What do you notice?**

**What do you wonder?**

**Straws and Connectors Worksheet 13a- Growing L -Tower**

1. **Visual Pattern. Draw figure 4**

**Figure 1 Figure 2 Figure 3 Figure 4**

1. **Table**

|  |  |  |
| --- | --- | --- |
| **Figure Number (n)** | **Number of Cubes(C)** | **Number Of Square Faces(S)** |
| ***1*** |  |  |
| ***2*** |  |  |
| ***3*** |  |  |
| ***4*** |  |  |
| ***5*** |  |  |
| ***10*** |  |  |
| ***20*** |  |  |
| ***n*** |  |  |

1. **a) Rule in words for finding the number of cubes for any figure number- \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**b) Rule in words for finding the number of square faces for any figure number\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**IV . Rule in Symbols a)**Rule for Cubes b) Rule for Square Faces

**V. Graph** . Plot the ordered pairs on the same coordinate plane. Connect all points on each set . Set 1 – (n,C) , Set 2 –(n, S)



Set 1

|  |  |
| --- | --- |
| **n** | **C** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Set 2

|  |  |
| --- | --- |
| **n** | **C** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

1. **Describe each graph.**
2. **What geometric relationship exists between the two graphs?**
3. **What conjectures can you make about the two equations and their graphs?**

**Straws and Connectors Worksheet 13a- Growing L -Tower**

1. **Visual Pattern- Draw figure 4.**

**Figure 1 Figure 2 Figure 3 Figure 4**

1. **Table-** Complete the Table below.

|  |  |  |
| --- | --- | --- |
| **Figure Number (n)** | **Number of Cubes(c)** | **Number Of Square Faces(s)** |
| *1* | ***3= 3 + 0*** | ***14=14+4(0)*** |
| *2* | ***4=3 + 1*** | ***18=14+4(1)*** |
| *3* | ***5= 3 + 2*** | ***22=14+4(2)*** |
| *4* | ***6= 3 + 3*** | ***26=14+4(3)*** |
| *5* | ***7=3 + 4*** | ***30=14+4(4)*** |
| *10* | ***12=3+9*** | ***50=14+4(9)*** |
| *20* | ***22=3+19*** | ***90=14+4(19)*** |
| *n* | ***3+(n-1)=n+2*** | ***14+4(n-1)=4n+10*** |

1. **a)Rule in words for finding the number of connectors for any figure number . *The number of cubess is equal to the figure number plus 2.***

**b) Rule in words for finding the number of straws for any figure number. *The number of square faces is equal to 10 plus 4 times the figure number.***

**IV . Rule in Symbols**

1. Rule for Cubes b) Rule for Square Faces

**C = n + 2 S = 4n + 10**

**V. Graph**



