**Straws and Connectors Worksheet 14a- Growing U-Tower**

**Figure 1 Figure 2 Figure 3**

**What do you notice?**

**What do you wonder?**

**Straws and Connectors Worksheet 14a- Growing U -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 Connectors b) Rule for Straws

**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 14a- Growing U-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* | ***5+2(0)=5*** | ***22+8(0)=22*** |
| *2* | ***5+2(1)=7*** | ***22+8(1)=30*** |
| *3* | ***5+2(2)=9*** | ***22+8(2)=38*** |
| *4* | ***5+2(3)=11*** | ***22+8(3)=46*** |
| *5* | ***5+2(4)=13*** | ***22+8(4)=54*** |
| *10* | ***5+2(9)=23*** | ***22+8(9)=94*** |
| *20* | ***5+2(19)=33*** | ***22+8(19)=174*** |
| *n* | ***5+2(n-1)=2n+3*** | ***22+8(n-1)=8n+14*** |

1. **a)Rule in words for finding the number of ccubes for any figure number . *The number of cubes is equal to 2 times the figure number plus 3.***

**b) Rule in words for finding the number of square faces for any figure number. *The number of square faces is equal to 14 plus 8 times the figure number.***

**IV . Rule in Symbols**

1. Rule for Cubes b) Rule for Square Faces

**C = 2n +3 S = 8n + 14**

V. Graph



