**Straws and Connectors Worksheet 10a- Growing Tower 2**

**Figure 1 Figure 2 Figure 3**

**What do you notice?**

**What do you wonder?**

**Straws and Connectors Worksheet 10a- Growing Tower 2**

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 10a- Growing Tower 2**

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* | ***2*** | ***10+8(0)=10*** |
| *2* | ***4*** | ***10+8(1)=18*** |
| *3* | ***6*** | ***10+8(2)=26*** |
| *4* | ***8*** | ***10+8(3)=34*** |
| *5* | ***10*** | ***10+8(4)=42*** |
| *10* | ***20*** | ***10+8(9)=82*** |
| *20* | ***40*** | ***10+8(19)=162*** |
| *n* | ***2(n)*** | ***10+8(n-1)=8n+2*** |

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

**b) Rule in words for finding the number of square faces for any figure number. *The number of square faces is equal to 2 plus 8 times the figure number.***

**IV . Rule in Symbols**

1. Rule for Cubes b) Rule for Square Faces

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

1. Graph



