**Straws and Connectors Worksheet 11b- Growing Tower 2**

**Figure 1 Figure 2 Figure 3**

**What do you notice?**

**What do you wonder?**

**Straws and Connectors Worksheet 11b- Growing Tower 2**

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

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

1. **Table**

|  |  |  |
| --- | --- | --- |
| **Figure Number (n)** | **Number of Connectors(C)** | **Number Of Straws(S)** |
| ***1*** |  |  |
| ***2*** |  |  |
| ***3*** |  |  |
| ***4*** |  |  |
| ***5*** |  |  |
| ***10*** |  |  |
| ***20*** |  |  |
| ***n*** |  |  |

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

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

**b) Rule in words for finding the number of straws 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 11b- 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 Connectors(C)** | **Number Of Straws(S)** |
| *1* | ***12+6(0)=12*** | ***20+13(0)=20*** |
| *2* | ***12+6(1)=18*** | ***20+13(1)=33*** |
| *3* | ***12+6(2)=24*** | ***20+13(2)=46*** |
| *4* | ***12+6(3)=30*** | ***20+13(3)=*** |
| *5* | ***12+6(4)=36*** | ***20+13(4)*** |
| *10* | ***12+6(9)=66*** | ***20+13(9)*** |
| *20* | ***12+6(19)=126*** | ***20+13(19)*** |
| *n* | ***12+6(n-1)=6n+6*** | ***20+13(n-1)=13n+7*** |

1. **a)Rule in words for finding the number of connectors for any figure number . *The number of connectors is equal to 6 times the figure number decreased by 1 plus 12.***

**b) Rule in words for finding the number of straws for any figure number. *The number of straws is equal to 13 times the figure number plus 7.***

**IV . Rule in Symbols**

1. Rule for Connectors b) Rule for Straws

**C = 6n+6 S = 13n+7**

1. Graph



