**Straws and Connectors Worksheet 10b- Growing Tower 1**

Pattern 3

**Figure 1 Figure 2 Figure 3**

**What do you notice?**

**What do you wonder?**

**Straws and Connectors Worksheet 10b- Growing Tower 1**

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*** |  |  |

**III. 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 10b- Growing Tower 1**

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* | ***8= 8 + 4(0)*** | ***12=12+ 8(0)*** |
| *2* | ***12= 8+4(1)*** | ***20=12 + 8(1)*** |
| *3* | ***16=8+4(2)*** | ***28=12+ 8(2)*** |
| *4* | ***20=8+4(3)*** | ***36=12+8(3)*** |
| *5* | ***24=8+4(4)*** | ***44=12+8(4)*** |
| *10* | ***44=8 + 4(9)*** | ***12+8(9)*** |
| *20* | ***84=8+4(19)*** | ***12+8(19)*** |
| *n* | ***8 + 4(n-1)=8+4n-4=4n+4*** | ***12+8(n-1)=12+8n-8=8n+4*** |

**III. a)Rule in words for finding the number of connectors for any figure number. *The number of connectors is equal to 4 times the figure number plus 8.***

**b) Rule in words for finding the number of straws for any figure number. *The number of straws is equal to 8 times the figure number plus 4.***

**IV . Rule in Symbols**

1. Rule for Connectors b) Rule for Straw

**C = 4n+4 S = 8n+4**

V. Graph





