Part 2: Repeating Functions

Look up at the moon on a clear night. Sometimes the moon is full and the night sky is bright. At other times, there is a new moon with no visible light and the sky is dark. The moon is said to **wax** from dark to bright and **wane** back to dark.

***Fraction of the Moon Visible at Midnight***

***Days 1 to 66 of the Year 2000***

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Day of Year | 1 | 2 | 3 | 4 | 5 | 6 | 10 | 15 | 20 | 21 |
| Fraction of Moon Visible | 0.25 | 0.18 | 0.11 | 0.06 | 0.02 | 0.00 | 0.11 | 0.57 | 0.99 | 1.00 |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Day of Year | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 66 |
| Fraction of Moon Visible | 0.80 | 0.32 | 0.02 | 0.14 | 0.64 | 1.00 | 0.77 | 0.31 | 0.01 | 0.00 |

Source: US Naval Observatory, Washington.

**Task 1**: Use desmos.com to create a scatter plot. Make sure window is appropriate.

**Task 2**: Answer the following questions based upon the graph you created above.

