**Function Applications – Height of a Ball**

Ben’s free throw follows a curved path. It goes up and then comes back down. The height of the ball ***h*** (in meters) at time ***t*** (in seconds) is given by the equation $h=-5t^{2}+10t+1$.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. Independent variable:
2. Dependent variable:
3. Use function notation to express the function:
4. We can say \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a

function of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.1. Find the height of Ben’s shot after 1.5 seconds. Use function notation.
2. Find the time it takes for Ben’s shot to be 6 meters above ground.
3. What are the domain and range of this function?
4. Describe the shape of this graph. Use the Parent Function Reference Sheet.
 | Complete the table below:

|  |  |
| --- | --- |
| **Time****(seconds)** | **Height (meters)** |
| 0 |  |
| .4 |  |
| .8 |  |
| 1.0 |  |
| 1.2 |  |
| 1.6 |  |
| 2.0 |  |

Graph the function on the axes below.Scale and label the axes.C:\Users\TRAVEL\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.IE5\G5RXD1SG\highway version c.png |