**MVP Math 2 Unit 3 (Module 1) Review Sheet Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Part 1: Simplify each of the following**

|  |  |  |
| --- | --- | --- |
|  |  |  |
|  |  |  |
|  |  |  |

**Part 2: Find the following for the provided functions. Round to the nearest hundredth if necessary.**

|  |  |
| --- | --- |
|  |  |
| **Vertex:** | **Vertex:** |
| **Minimum or Maximum** | **Minimum or Maximum** |
| **Find .** | **Find** |
| **Find x if** | **Find x if** |

**Part 3: Application**

1. **Jason kicked a football on a projectory path that followed the model , where is the height of the ball in feet off of the ground and is the time in seconds.**
   1. **What is the maximum height of the football? \_\_\_\_\_\_\_\_**
   2. **When does the football reach its maximum height? \_\_\_\_\_\_\_\_**
   3. **From what height did the football start its parabolic path? \_\_\_\_\_\_\_\_**
   4. **What was the height of the football 2.5 seconds after it was kicked? \_\_\_\_\_\_\_\_**
   5. **At what time did the football reach a height of 20 feet on its way down? \_\_\_\_\_\_\_\_**
   6. **When did the football reach a height of 30 feet? \_\_\_\_\_\_\_\_**
   7. **When did the football collide with the ground? \_\_\_\_\_\_\_\_**

**Part 4: Tables. Complete each of the following for the provided tables. For your explanations use phrases such as 1st difference, 2nd difference, common difference, common ratio, etc. THEN WRITE THE EXPLICIT EQUATION.**

|  |  |
| --- | --- |
| **x** | **y** |
| **-2** | **12** |
| **-1** | **3** |
| **0** | **0** |
| **1** | **3** |
| **2** | **12** |
| **3** | **27** |

|  |  |
| --- | --- |
| **x** | **y** |
| **0** | **0** |
| **1** | **5** |
| **2** | **40** |
| **3** | **135** |
| **4** | **320** |
| **5** | **625** |

|  |  |
| --- | --- |
| **x** | **y** |
| **-3** | **-19** |
| **-2** | **-17** |
| **-1** | **-15** |
| **0** | **-13** |
| **1** | **-11** |
| **2** | **-9** |

**Pattern Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pattern Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pattern Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Why?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Why?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

|  |  |
| --- | --- |
| **x** | **y** |
| **2** | **15** |
| **3** | **35** |
| **4** | **63** |
| **5** | **99** |
| **6** | **143** |
| **7** | **195** |

|  |  |
| --- | --- |
| **x** | **y** |
| **-3** | **-16** |
| **-2** | **-10** |
| **-1** | **-4** |
| **0** | **2** |
| **1** | **8** |
| **2** | **14** |

|  |  |
| --- | --- |
| **x** | **y** |
| **-5** | **-24** |
| **-4** | **-15** |
| **-3** | **-8** |
| **-2** | **-3** |
| **-1** | **0** |
| **0** | **1** |

**Pattern Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pattern Type: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Pattern Type: Why?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Why? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Why?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equation: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Equation:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**