**Identify the parent function, sketch the graph, and find the domain and the range for each function.**

|  |  |  |  |
| --- | --- | --- | --- |
| **1.** |  | **2.** |  |
|  | **Domain**  **Range** |  | **Domain**  **Range** |
| **3.** |  | **4.** |  |
|  | **Domain**  **Range** |  | **Domain**  **Range** |

**Identify the parent function and describe the transformations.**

|  |  |  |
| --- | --- | --- |
| **5.** |  | **Parent :**  **Transformation:** |
| **6.** |  | **Parent :**  **Transformation:** |
| **7.** |  | **Parent:**  **Transformation:** |
| **8.** |  | **Parent :**  **Transformation:** |

**Given the parent function and a description of the transformation, write the equation of the transformed function .**

|  |  |  |
| --- | --- | --- |
| **9.** | **Square Root Function**  Reflected in the x-axis  Translated 12 units down |  |
| **10.** | **Absolute value-**  Translated 12 units up  Translated 23 units left |  |
| **11.** | **Reciprocal Function**  Expanded vertically by a factor of 4  Reflected in the x-axis and translated 2 units up |  |
| **12.** | **Greatest Integer Function**  Reflected in the y -axis and translated 16 units up |  |

**Use the graph of parent function to graph each function. Find the domain and the range of the new function.**

|  |  |  |  |
| --- | --- | --- | --- |
| **13.** |  |  |  |
|  |  |  |  |
| **14.** |  |  |  |
|  |  |  |  |
| **15.** |  |  |  |
|  |  |  |  |
| **16.** |  |  |  |
|  |  |  |  |

**Graph each function.**

|  |  |  |  |
| --- | --- | --- | --- |
| **17.** |  |  |  |
|  |  |  |  |
| **18.** |  |  |  |
|  |  |  |  |

**Graph each piecewise function.**

|  |  |  |
| --- | --- | --- |
| **19.** |  |  |
| **20.** |  |  |

**ANSWERS**

**Identify the parent function, sketch the graph, and find the domain and the range for each function.**

|  |  |  |  |
| --- | --- | --- | --- |
| **1.** |  | **2.** |  |
|  | **Quadratic Function**    **Domain**  **Range** |  | **Constant Function**    **Domain**  **Range** |
| **3.** |  | **4.** |  |
|  | **Cubic Function**    **Domain**  **Range** |  | **Reciprocal Function**    **Domain**  **Range** |

**Identify the parent function and describe the transformations.**

|  |  |  |
| --- | --- | --- |
| **5.** |  | **Parent :**  **Transformation:** Translated 4 units left |
| **6.** |  | **Parent :**  **Transformation:**  Reflected in the x-axis  Expanded vertically by a factor of 2  Translated 4 units right |
| **7.** |  | **Parent :**  **Transformation:** Translated 18 units down |
| **8.** |  | **Parent :**  **Transformation:**  Reflected in the x-axis  Translated 6 units down  Translated 1 unit left |

**Given the parent function and a description of the transformation, write the equation of the transformed function .**

|  |  |  |
| --- | --- | --- |
| **9.** | **Square Root Function**  Reflected in the x-axis  Translated 12 units down |  |
| **10.** | **Absolute value-**  Translated 12 units up  Translated 23 units left |  |
| **11.** | **Reciprocal Function**  Expanded vertically by a factor of 4  Reflected in the x-axis and translated 2 units up |  |
| **12.** | **Greatest Integer Function**  Reflected in the y -axis and translated 16 units up |  |

**Use the graph of parent function to graph each function. Find the domain and the range of the new function.**

|  |  |  |  |
| --- | --- | --- | --- |
| **13.** |  |  |  |
|  | **Parent function**  **Transformation:**  Expanded vertically by a factor of 3  Translated 1 unit down  Translated 3 units left |  |  |
| **14.** |  |  |  |
|  | **Parent function**  **Transformation:**  Translated 4 units up  Translated 2 units right |  |  |
| **15.** |  |  |  |
|  | **Parent function**  **Transformation:**  Reflected in the x-axis  Translated 2 units down  Translated 5 units right |  |  |
| **16.** |  |  |  |
|  | **Parent function**  **Transformation:**  Translated 2 units up  Translated 4 units right |  |  |

**Graph each function.**

|  |  |  |  |
| --- | --- | --- | --- |
| **17.** |  |  |  |
|  |  |  |  |
| **18.** |  |  |  |
|  |  |  |  |

**Graph each piecewise function.**

|  |  |  |
| --- | --- | --- |
| **19.** |  |  |
| **20.** |  |  |