**Day 3: Transformations of Functions Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Practice Assignment**

For the following functions, name all the transformations and then give the y-intercept, asymptote, and whether it is growth or decay:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function** | **Transformations** | **Y-intercept** | **Asymptote** | **Growth/Decay** |
| a.  |  |  |  |  |
| b.  |  |  |  |  |
| c.  |  |  |  |  |
| d.  |  |  |  |  |
| e.  |  |  |  |  |
| f.  |  |  |  |  |
| g.  |  |  |  |  |
| h.  |  |  |  |  |
| i.  |  |  |  |  |

**Directions:** For each of the following transformations, create a function that would represent those transformations. The base function is given for each set.

1. Base Function: y = 2x

a. Up 5 units b. Left 2 units c. Reflected over the x-axis and right 4 units

2. Base Function: y = ½x

a. Down 6 units b. Shrunk by a factor of ¼ c. Reflected over x-axis and stretch by factor of 3

3. Base Function: y = 0.4x

a. Right 2 units b. Reflected over x axis c. Up 4 units and left 7 units

**Directions:**  For each of the following functions, describe the transformations:

a. f(x) = 🡪 2f(x) b. f(x) 🡪 f(x – 3) c. f(x) 🡪 f(x) – 2 d. f(x) 🡪 -¾f(x)

e. f(x) 🡪 f(x + 3) – 5 f. f(x) 🡪 ½f(x + 2) + 1 g. f(x) 🡪 -f(x) + 9 h. f(x) 🡪 3f(x – 6) + 4