**Chapter 1 – Graphing Assignment**

Find a partner and complete the following. **You will hand it in on Monday. I suggest you graph each with an online graphing program like fooplot.com or desmos.com to check your work!**

For the following 4 functions,

* List all of the transformations.
* Create a parent table and transformed table.
* Make a graph.
* State the Domain and Range.
* State the Intervals of Increase/Decrease.
* State the End Behaviours.
* State the equations of the asymptotes if applicable.

|  |  |
| --- | --- |
| a) $f\left(x\right)= \frac{1}{x} , y =6 f\left(-\left(x+1\right)\right)-4$ | b) $y= -\sqrt{-0.5\left(x-3\right)}+4 $ |
| c) $g\left(x\right)= \left|x\right| , y =0.5 g\left(2x\right)+3$ | d) $y=6\sin(\left(-45\left(x+2\right)\right))-3 $ |

1. $f\left(x\right)= \frac{1}{x} , y =6 f\left(-\left(x+1\right)\right)-4$

vertically stretched by factor 3

reflected in the y-axis

translated left 1 unit

translated down 4 units

$D: \{\left\{x\ne -1\right\}$ $R: \{\left\{y\ne -4\right\}$

Interval of Increase $\left(-\infty ,-1\right), (-1, \infty )$

End Behaviours $as x\rightarrow \infty , y\rightarrow -4, as x\rightarrow -\infty , y\rightarrow -4, as x\rightarrow -1^{-}, y\rightarrow \infty , as x\rightarrow -1^{+}, y\rightarrow -\infty $

Asymptotes x=-1, y = -4



1. $y= -\sqrt{-0.5\left(x-3\right)}+4 $

horizontally stretched by factor 2

reflected in the x and the y-axis

translated right 3 units

translated up 4 units

$D: \{\left\{x\leq 3\right\}$ $R: \{\left\{y\leq 4\right\}$

Interval of Increase $(-\infty ,3)$

End Behaviours $as x\rightarrow -\infty , y\rightarrow -\infty $



1. $g\left(x\right)= \left|x\right| , y =0.5 g\left(2x\right)+3$

vertically compressed by factor 0.5

horizontally compressed by factor 0.5

translated up 3 units

$D: \{x\in R\}$ $R: \{\left\{y\geq 3\right\}$

Interval of Increase $\left(0,\infty \right)$ ; Intervals of Decrease $ (-\infty ,0)$

End Behaviours $as x\rightarrow \infty , y\rightarrow \infty , as x\rightarrow -\infty , y\rightarrow \infty $



d) $y=6\sin(\left(-45\left(x+2\right)\right))-3 $

vertically stretched by factor 6

reflected in the y-axis

horizontally compressed by factor 1/45

translated left 2 unit

translated down 3 units

$D: \{x\in R\}$ $R: \{\left\{-9\leq y\leq 3\right\}$

Interval of Increase …(-8,-4) , (0,4) , (8,12)… (0+4n, 4+4n), where $n\in I$

Intervals of Decrease …(-4,0), (4,8), (12,16) … (4 + 4n, 8+ 4n), where $n\in I$

End Behaviours $ :none as it is oscillating$

