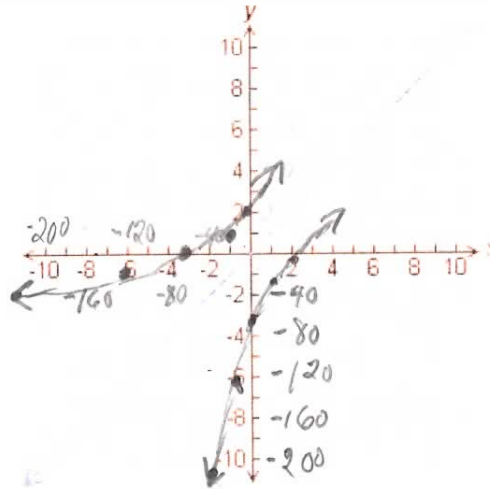


### M3H - U4 Day 1 HW

1. Given  $f(x) = (x - 4)^3 + 1$ , complete the T-tables, switch the D and R values, and sketch both graphs on the same axes. Note the reflection over  $y = x$ .

x	f(x)
-2	-215
-1	-124
0	-63
1	-26
2	-7

x	$f^{-1}(x)$
-215	-2
-124	-1
-63	0
-26	1
-7	2

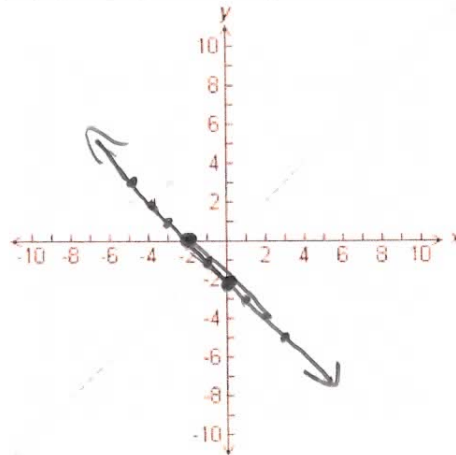


	f(x)	$f^{-1}(x)$
Domain (Restrict if needed so $f^{-1}(x)$ is a function.)	$(-\infty, \infty)$	$(-\infty, \infty)$
Range	$(-\infty, \infty)$	$(-\infty, \infty)$
End Behavior	$x \rightarrow -\infty, y \rightarrow -\infty$ $x \rightarrow \infty, y \rightarrow \infty$	$x \rightarrow -\infty, y \rightarrow -\infty$ $x \rightarrow \infty, y \rightarrow \infty$

2. Given  $f(x) = |x - 3| - 5$ , complete the T-tables, switch the D and R values, and sketch both graphs on the same axes. Note the reflection over  $y = x$ .

x	f(x)
-2	0
-1	-1
0	-2
1	-3
2	-4

x	$f^{-1}(x)$
0	-2
-1	-1
-2	0
-3	1
-4	2



$$y = -(x-3) + 5$$

$$y = -x + 8$$

$$x = -y + 8$$

$$x - 8 = -y$$

$$-x + 8 = y$$

	f(x)	$f^{-1}(x)$
Domain (Restrict if needed so $f^{-1}(x)$ is a function.)	$y = -x + 8$ $(-\infty, 3]$	$y = -x + 8$ $[-5, \infty)$
Range	$[-5, \infty)$	$(-\infty, 3]$
End Behavior	$x \rightarrow 3, y \rightarrow -5$ $x \rightarrow \infty, y \rightarrow \infty$	$x \rightarrow -5, y \rightarrow 3$ $x \rightarrow \infty, y \rightarrow -\infty$

Function and inverse are same line with domain and Range switched