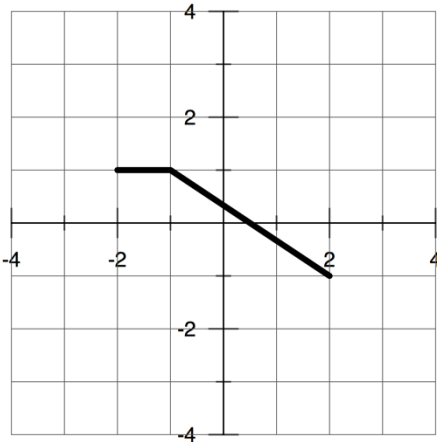


Transformations Review

1. If $(2, 3)$ is a point on the graph of $y = f(x)$, what point must be on the graph of $y = 3f\left(\frac{1}{4}x\right)$?
2. Determine one possible restriction for the domain of $y = (x + 3)^2 - 4$ so that its inverse is a function.
3. The range of the graph $y = f(x)$ is $[-3, 2]$. Explain why there is no effect on the range of the graph that is a result of the transformation $y = f(-x)$.
4. Given the graph of $f(x)$ below, sketch the graph of $y = -f(x)$.



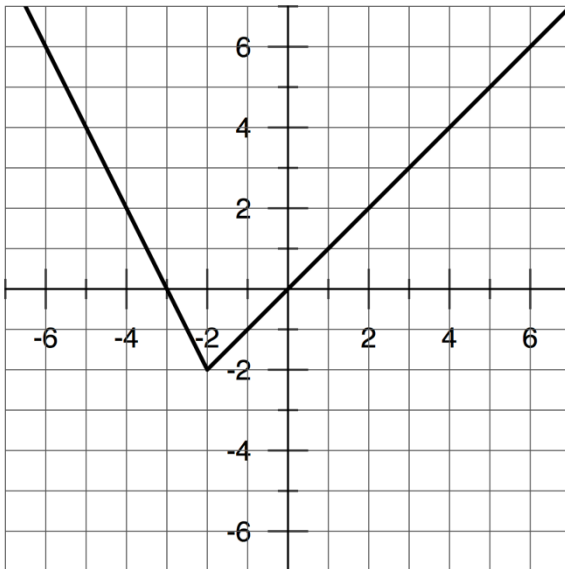
5. Sketch the graph of $y = \sqrt{2x - 2}$.
6. Given $f(x) = 2x - 6$, write the equation of $f^{-1}(x)$.
7. Describe the effects on the graph of $y = f(x)$ when asked for the graph of $y = f(x - 3) + 5$.
8. Given the graph of $y = f(x)$, describe the transformations necessary to obtain the graph of the function $y = f(2x - 6)$.
9. Given $f(x) = \{(-3, 4), (2, 7), (8, 6)\}$, state the domain of the resulting function after $f(x)$ is reflected through the line $y = x$.
10. If the point $(3, -2)$ is on the graph of $y = f(x)$, what point must be on the graph of $y = 2f(x + 1)$?

11. Given $f(x) = 4 - x$, verify that $f^{-1}(x) = f(x)$.

12. Sketch the graph of $y = \sqrt{x+1} - 2$ and verify that the value of the x -intercept is the same as the solution to the equation $\sqrt{x+1} - 2 = 0$.

13. Alex incorrectly explains to Rashid that the graph of $y = 2f(x) + 5$ means you first move the graph of $y = f(x)$ up 5 units and then multiply the y values by 2. Explain to Rashid the correct way to transform the graph.

14. Given the graph of $f(x)$ below, sketch the graph of $g(x) = f(x-2) + 3$.



15. If the point $(4, -3)$ lies on the graph of $f(x)$, which point must lie on the graph of $2f(2x)$?

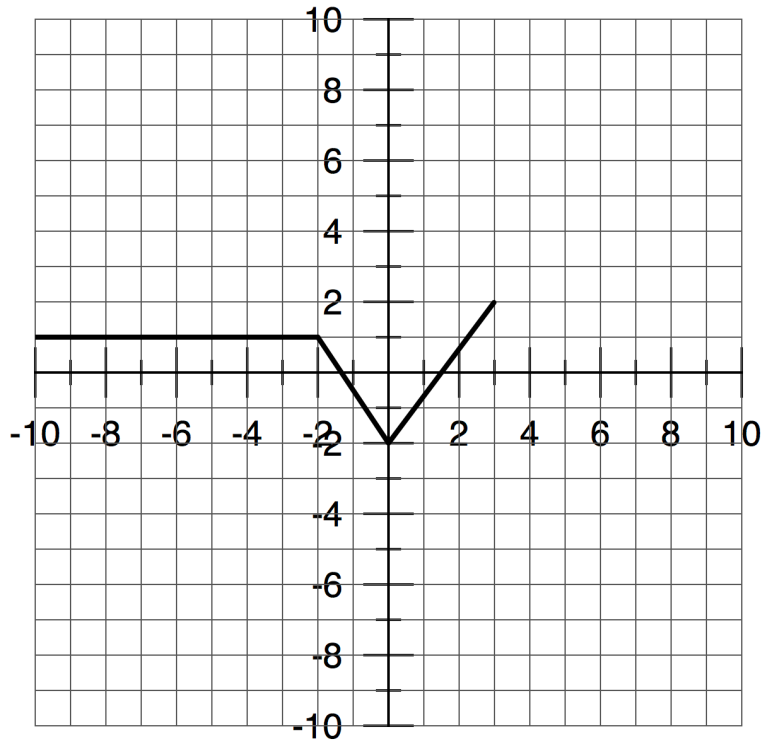
16. The graph of $y = \left(\frac{1}{2}\right)^x$ compared to the graph of $x = \left(\frac{1}{2}\right)^y$ is a _____.

17. Given $f(x) = (x+1)^2$ for $x \leq -1$, write the equation of $y = f^{-1}(x)$.

18. Determine one possible restriction for the domain of $f(x) = (x-1)^2$ so that the inverse of $f(x)$ is a function.

19. The graph of $f(x) = x^2 + 4$ is reflected over the x -axis. Write the equation of the new function.

20. Given the graph of $y = f(x)$ below, sketch the graph of $y = 2f(x) - 3$.



21. Given $f(x) = x^2 - x + 2$, write an equation that represents the graph of $f(x)$ shifted 3 units to the right.

22. What is the domain of the function $y = \sqrt{-4x}$?

23. Given the graph of $f(x)$ contains the point $(-3, 5)$, what point must be on the graph of $f(-x)$?

24. Sketch the graph of $y = -\sqrt{3(x+1)}$.