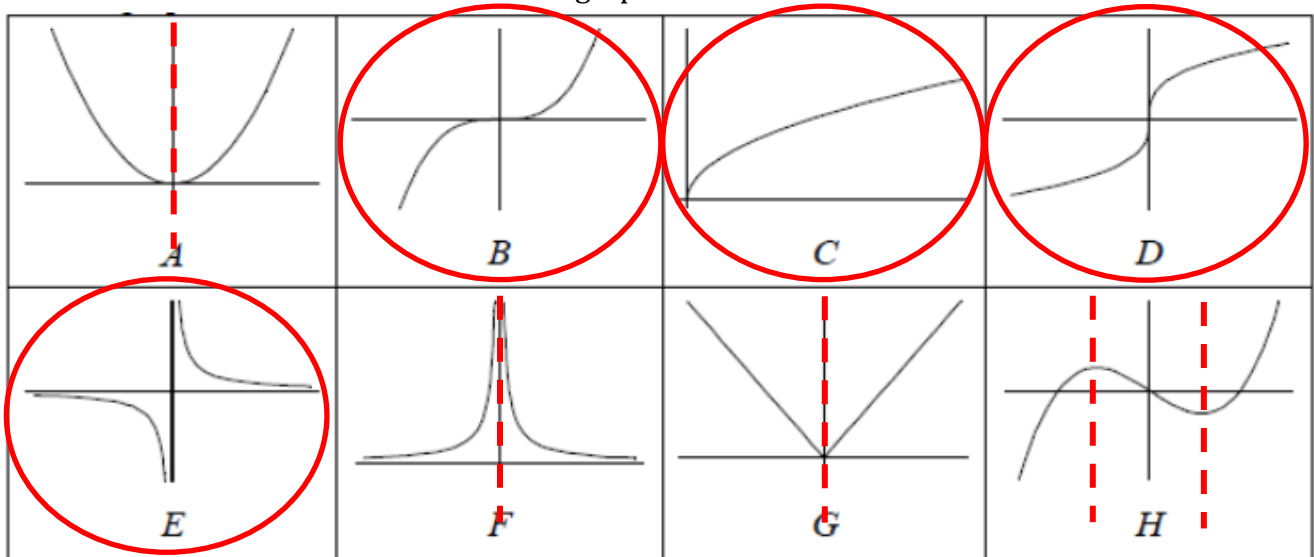


## Unit 1 Day 12 Practice – Finding Inverse Functions

1. Circle any graph below that has an inverse function. For those that do not have an inverse function, draw a vertical line that would divide the graph into sections that do have inverse functions.



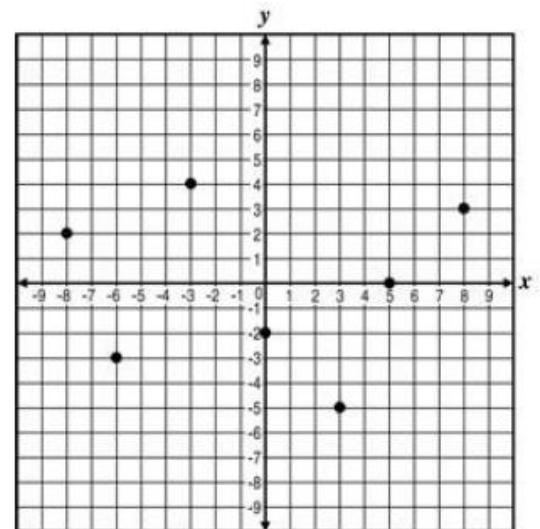
The table to the right shows the values of the function  $g(x)$ . Use this table to answer the questions below.

2. What is  $g(-2)$ ? -16
3. What is  $g^{-1}(-2)$ ? -1
4. What is  $g(0)$ ? 0
5. What is  $g^{-1}(0)$ ? 0
6. What is  $g^{-1}(16)$ ? 2
7. What is  $g^{-1}(2)$ ? 1
8. What is  $g(2)$ ? 16
9. What is  $g^{-1}(54)$ ? 3

$x$	$g(x)$
-3	-54
-2	-16
-1	-2
0	0
1	2
2	16
3	54

The graph to the right represents the function  $h(x)$ . Use this graph to answer the questions below about  $h(x)$ .

10. Find  $h(-3)$ : 4
11. Find  $h^{-1}(-3)$ : -6
12. Find  $h(8)$ : 3
13. Find  $h^{-1}(4)$ : -3
14. Find  $h(-8)$ : 2
15. Find  $h^{-1}(2)$ : -8
16. Find  $h^{-1}(-2)$ : 0
17. Find  $h^{-1}(0)$ : 5



18. Three functions are shown below. Two of the functions represent inverses of one another. Identify which two functions are inverses. Prove your answer mathematically.

$$f(x) = 4x^3 - 8$$

$$g(x) = \sqrt[3]{\frac{x+2}{4}}$$

$$h(x) = \sqrt[3]{\frac{1}{4}x + 2}$$

**Find the inverse of each function below. Label the inverse function with the proper notation.**

19.  $f(x) = 3x + 1$

$$f^{-1}(x) = \frac{x - 1}{3}$$

22.  $j(x) = \sqrt{3x + 1} - 10$

$$j^{-1}(x) = \frac{(x + 10)^2 - 1}{3}$$

20.  $g(x) = 5 - 2x^2$

$$g^{-1}(x) = \pm \sqrt{\frac{x - 5}{-2}}$$

23.  $k(x) = \frac{3x^2}{4}$

$$k^{-1}(x) = \pm \sqrt{\frac{4x}{3}}$$

21.  $h(x) = \sqrt[3]{4x - 1} + 5$

$$h^{-1}(x) = \frac{(x - 5)^3 + 1}{4}$$

24.  $m(x) = \frac{x-8}{4}$

$$m^{-1}(x) = 4x + 8$$