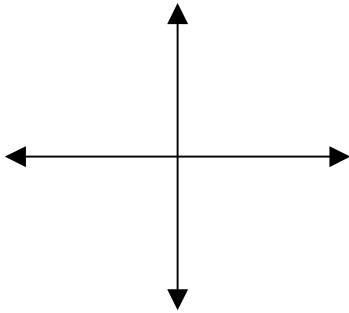


161 Test 2

Name _____

Note: This is an exam from spring 02. Your exam will look different, although some problems will be similar. Please also see the practice exam for more practice.

1. Draw a picture of a line with slope -2 through the origin. Explain in clear English why the slope of your line is -2 .



2. The equation for the x-axis is _____ and the equation of the y-axis is _____
3. If the slope of a line is -1 and $(2,3)$ is on the graph of the line, then $(4, \underline{\quad})$ is also on the graph.
4. The slope of a horizontal line is _____, because as x increases by 1 unit y remains constant. The slope of a vertical line is _____, because _____.
5. Find the equation of the line with slope 4 through the point $(1,0)$
6. Find the equation of the line that passes through the points $(2,3)$ and $(4,1)$

For problems 8 through 13, Let $f(x) = \frac{1}{x-1}$ and $g(x) = x^2 - 1$

7. Using plain English, describe what each function does without using the word x .

8. What is the domain of f ?

9. What is the domain of g ?

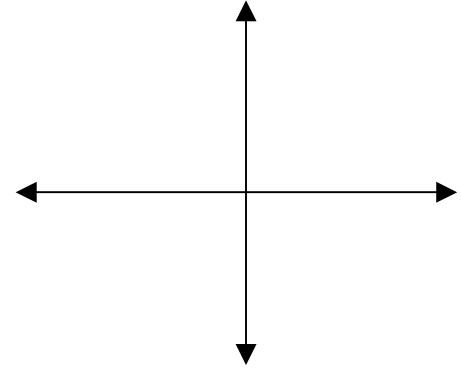
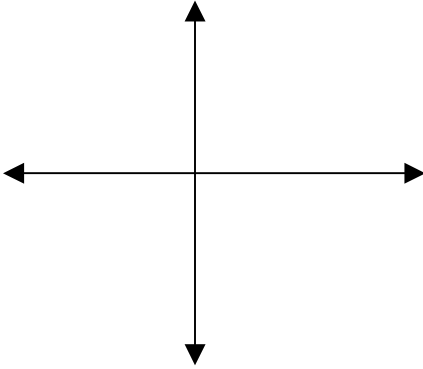
10. $f(2) = \underline{\hspace{2cm}}$, $g(2) = \underline{\hspace{2cm}}$, $(g - f)(2) = \underline{\hspace{2cm}}$

11. $f(t+1) = \underline{\hspace{2cm}}$, $g(s+t) = \underline{\hspace{2cm}}$

12. Find $(f \circ g)(x)$ Are f and g inverses?

13. An even function is symmetric with respect to $\underline{\hspace{2cm}}$, and an odd function is symmetric with respect to $\underline{\hspace{2cm}}$.

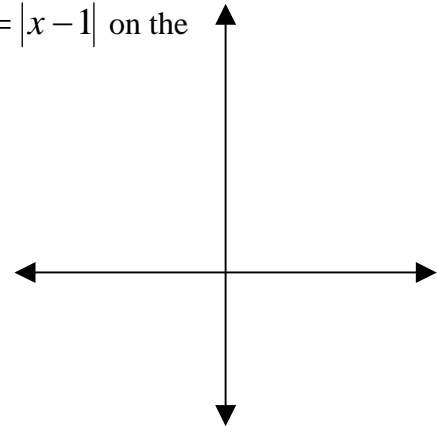
14. Draw a picture of an even function on the left coordinate axis and an odd function on the right.



15. Compared to the graph of $y = \sqrt{x}$, the graph of $y = \sqrt{x+3} - 2$ is shifted how?

16. Let $f(x) = \frac{3x+4}{5}$ Find f^{-1}

18. Draw a picture of the function $f(x) = |x|$ and $g(x) = |x-1|$ on the axis given to the right.



19. Is the absolute value function even, odd or neither?

20. Does it have an inverse?

21. Extra credit if you have finished and checked your other answers.

Let $f(x) = 2x - 1$, $g(x) = \frac{1}{x-1}$ Find f^{-1} , g^{-1} and $f \circ g$.

Which one is the inverse of $f \circ g$: $f^{-1} \circ g^{-1}$ or $g^{-1} \circ f^{-1}$?