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,___) 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)
Let \( f (x) = \frac{1}{x - 1} \), \( g (x) = x^2 - 1 \)

7. The domain of \( f \) is _____________ and the domain of \( g \) is ___________

8. Using plain English, describe what each function does without using the word \( x \).

9. \( f(3) = \), \( f(-3) = \), \( g(3) = \), \( g(-3) = \)

10. \( (f + g)(3) = \), \( (f - g)(-3) = \)

11. Is \( f \) even, odd or neither? ___________ Is \( g \) even, odd or neither? ___________

12. Find \( \frac{g}{f}(x) \)

13. What is the domain of \( \frac{g}{f} \)?

14. Find \( f \circ g(x) \)

15. Find \( g \circ f(x) \)
16. In general, if for each domain element \( x \): \( f(-x) = f(x) \) the function is called ________ whereas if \( f(-x) = -f(x) \) the function is ________.

17. And even function is symmetric with respect to ____________, and an odd function is symmetric with respect to ______________.

18. Draw a picture of an even function on the left and an odd function on the right.

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

20. Let the function \( F \) be given by the following ordered pairs

\[
\left( -\frac{1}{2}, -1 \right), \left( -\frac{1}{3}, -\frac{\sqrt{3}}{2} \right), \left( -\frac{1}{4}, -\frac{\sqrt{2}}{2} \right), \left( -\frac{1}{6}, -\frac{1}{2} \right), (0,0), \left( \frac{1}{4}, \frac{1}{2} \right), \left( \frac{1}{3}, \frac{\sqrt{3}}{2} \right), \left( \frac{1}{2}, 1 \right)
\]

20. What is the domain of \( F \)?

21. What is the range of \( F \)?

22. Is \( F \) a one to one function? ________

23. Is \( F \) even, odd, or neither? ________
24. Find the vertex of the quadratic function \( f(x) = (x - 3)^2 - 4 \). The minimum value of \( f \) is ____ when \( x = ____ \)

25. Find the vertex of the quadratic function \( g(x) = x^2 + 2x - 15 \). The minimum value of \( g \) is ____ when \( x = ____ \)