1. Graph \( y = -|x| + 6 \)

2. Find an equation of a line passing through \((-1,-3)\) and parallel to the line \(2x + y = 19\)

\[
y = -2x - 5
\]

3. Given \( f(x) = \begin{cases} \sqrt{-x}, & x \leq 0 \\ 6x, & x > 0 \end{cases} \) find \( f(4) \)

\[
24
\]

4. If \( f(x) = x^2 - 2x \), find \( \frac{f(x + h) - f(x)}{h}, h \neq 0 \)

\[
2x-2+h
\]

5. Find the domain of \( f(x) = \sqrt{5-x} \)

\[
(-\infty, 5]
\]

6. Graph \( f(x) = [x+1] \)

7. Determine where function is increasing, decreasing, and whether it has a relative maximum or relative minimum.

inc. \((-\infty, -2) (0, \infty)\)
dec. \((-2, 0)\)
rel max @ \( x = -2 \)
rel min @ \( x = 0 \)
8. Determine whether the functions are odd or even or neither.
   a. \( f(x) = 2x^3 + 3x^2 \) \( \text{neither} \)
   b. \( f(x) = 3x^2 - 6 \) \( \text{even} \)

9. Find an equation of a function that shifts \( f(x) = x^2 \) two units up vertically, three units to the right horizontally.
   \( f(x) = (x-3)^2 + 2 \)

10. Graph \( g(x) = -x^2 + 2 \) using \( f(x) = x^2 \)

11. Given \( f(x) = x + 1 \) \( g(x) = x + 9 \)
    \( g(f(x)) = g(x+1) \)
    a. Find \( (g \circ f)(x) = \) \( (g \circ f)(x) = x + 10 \)
    b. Find \( (g + f)(x) = \) \( 2x + 10 \)
    c. Find \( f^{-1}(x) = \) \( x - 1 \)

12. Show \( f(x) = \frac{x}{2} \) and \( g(x) = 2x \) are inverse of each other.
    \( f \circ g(x) = x \)
    \( f(g(x)) = \)
    \( f(2x) = \)
    \( g \left( \frac{x}{2} \right) = \)
    \( \frac{2x}{2} = \)
    \( 2 \left( \frac{x}{2} \right) = \)
    \( x = \)