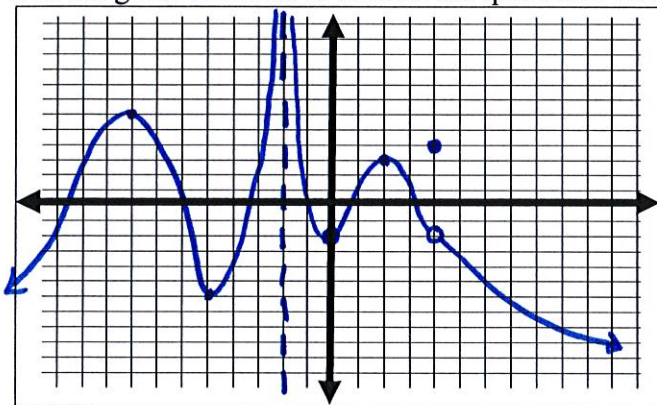


5. Given: $f(x) = \begin{cases} |x|, & x < 1 \\ 3, & x = 1 \\ x + 1, & 1 < x \leq 3 \end{cases}$

- A. Graph B. $f(4)$ C. $f(1)$ D. $f(-2)$

6. Use the given function to answer the questions that follow.



- | |
|--|
| A. State the domain in interval notation. |
| B. State the range in interval notation. |
| C. State the interval(s) where $f(x)$ is increasing. |
| D. State the interval(s) where $f(x)$ is decreasing. |
| E. State the interval(s) where $f(x)$ is constant. |
| F. State the relative/local maximum(s). |
| G. State the relative/local minimum(s). |
| H. $f(4)$ |
| I. Is the function continuous? State the location and type of discontinuity. |

7. Sketch each function.

A. $f(x) = -3\sqrt{x+4}$ B. $w(x) = -(x+2)^3 - 1$ C. $g(x) = (x+1)^2 - 3$ D. $p(x) = |x+1| - 2$

8. Given $f(x) = x^3$, explain the transformation of each curve from the parent curve:

A. $f(x) - 2$ B. $f(-x)$ C. $f(x+1)$ D. $2f(x)$ E. $-f(x-3) + 4$

9. Find $f^{-1}(x)$. A. $f(x) = \frac{2x+3}{5x-2}$ B. $f(x) = \sqrt[3]{x+2} - 1$

10. If $f(x) = \begin{cases} 3x + 1, & x > -4 \\ 1 - kx^2, & x < -4 \end{cases}$ determine the value of k that makes the function continuous.

11. Determine, using composite functions, if $f(x)$ and $g(x)$ are inverses.

A. $f(x) = 3x + 7, g(x) = \frac{1}{3}x - 7$ B. $f(x) = 1 + \sqrt{x}, g(x) = (x-1)^2$