

Functions:

1. If $f(x) = x^2 - x$, find $f(x+1) - f(x)$
2. If $f(x) = x^2 - 3x$, find $f(1) - f(-1)$
3. $f: A \rightarrow B$, $f(x) = 2x - 3$ and $R_f = \{-3, 1, 0\}$. Find the Domain A of function f.
4. $f(x) = 1 - 4x$ and $x \in \{-\frac{1}{2}, 0, 2\}$, Find the Range of the function f.
5. Determine the type of function:
 - a. $f(x) = |x+1|$
 - b. $f(x) = 3$
 - c. $f(-x) = -x$
 - d. $f(y) = [y]$
 - e. $f(x) = \pi$
 - f. $f(2x) = 2x$
6. Find the domain of the following functions:
 - a. $f(x) = \frac{x^2 - 36}{x - 6}$
 - b. $f(x) = \frac{3 - x}{x - 3}$
 - c. $f(x) = \frac{x^2 - 2x + 9}{x^2 - 7x + 10}$
7. If the domain of $f(x) = \frac{x+3}{x+4}$ is $\{0, 2, 4, 6\}$ find R_f .
8. If $f(x) = x^2 + 4x + 5$ and $g(x) = 2x + 1$ find the value of $f(1) - 2 \cdot g(2)$