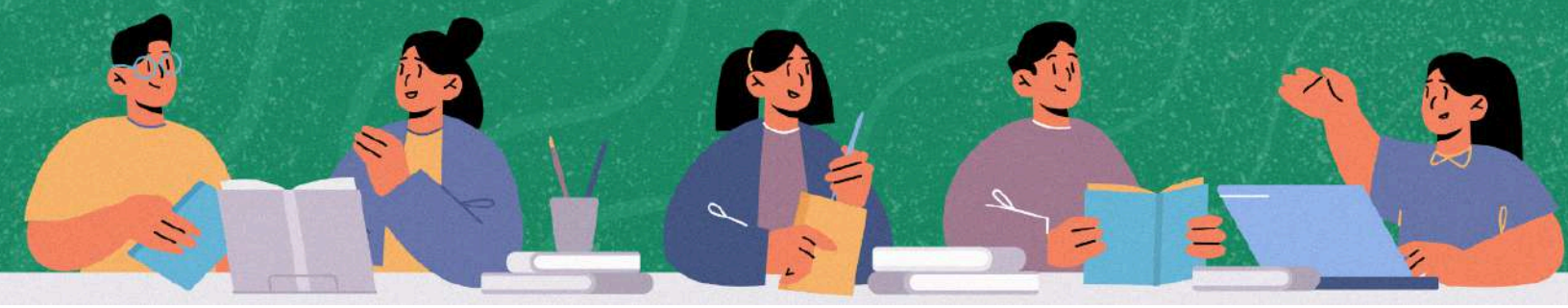
GeeksforGeeks

WORKSHEET

Analyzing the Graphs of Functions

Unsolved with Answer key



WORKSHEET

Analyzing the Graphs of Functions

Q 1. For the function $g(x) = x^2 - 4x + 3$, find the x-intercepts and y-intercepts using its graph.

Q 2. Analyze the graph of $h(x) = x^3 - 3x$. Is the graph symmetric with respect to the y-axis, x-axis, or the origin?

Q 3. Based on the graph of $f(x) = -x^2 + 4x - 1$, identify the intervals where the function is increasing and where it is decreasing.

Q 4. Describe the end behavior of the function $f(x) = 3x^3 - 5x^2 + 2x$.

Q 5. Analyze the graph of $f(x) = 1/(x - 2)$ and determine if the function is continuous. If not, identify the points of discontinuity.

Q 6. For the function $g(x) = (2x + 1)/(x - 3)$, identify any horizontal or vertical asymptote.

Answer Key

Analyzing the Graphs of Functions

1.

- **X-intercepts:** (1, 0)and (3, 0)
- **Y-intercept:** (0, 3)

2. **Symmetry:** Origin symmetry

3.

- **Increasing interval:** $(-\infty, 2)$
- **Decreasing interval:** $(2, \infty)$

4. **End behavior:**

- $x \to +\infty$: $f(x) \to +\infty$
- $x \to -\infty$: $f(x) \to -\infty$

5. **Point of discontinuity:** $x = 2$

6.

- **Vertical asymptote:** $x = 3$
- **Horizontal asymptote:** $y = 2$