



In this worksheet you will determine the domain and range of functions given by equations or graphs. You are expected to identify all possible inputs and outputs without using content from later topics.

Easy Questions

1. Write down the domain and range of $f(x) = 3$.
2. Write down the domain and range of $f(x) = x$.
3. Write down the domain and range of $f(x) = x^2$.
4. Write down the domain and range of $f(x) = \sqrt{x}$.
5. Write down the domain and range of $f(x) = \frac{1}{x-2}$.

Intermediate Questions

6. Determine the domain and range of $f(x) = |x - 3|$.
7. Determine the domain and range of $f(x) = \sqrt{x + 2}$.
8. Determine the domain and range of $f(x) = \frac{1}{x^2 - 1}$.
9. Determine the domain and range of $f(x) = \frac{x + 2}{x - 3}$.
10. Determine the domain and range of $f(x) = \sqrt{4 - x}$.
11. Determine the domain and range of $f(x) = \frac{x^2 - 4}{x + 2}$.
12. Determine the domain and range of $f(x) = |x|$.
13. Determine the domain and range of $f(x) = \frac{2}{3 - x}$.
14. Determine the domain and range of $f(x) = \sqrt{9 - x^2}$.
15. Determine the domain and range of $f(x) = \frac{1}{\sqrt{x - 1}}$.
16. Determine the domain and range of $f(x) = (x - 1)^2$.

17. Determine the domain and range of $f(x) = \frac{1}{x^2 + 1}$.
18. Determine the domain and range of $f(x) = |2 - x|$.
19. Determine the domain and range of $f(x) = \sqrt{x^2 - 4}$.
20. Determine the domain and range of $f(x) = \frac{x + 1}{x^2 + 1}$.

Hard Questions

21. The function $f(x) = \begin{cases} x^2, & x < 0, \\ \sqrt{x}, & x \geq 0, \end{cases}$ is given. Determine the domain and range of f .
22. Determine the domain and range of $f(x) = \sqrt{4 - |x|}$.
23. Determine the domain and range of $f(x) = \frac{1}{\sqrt{9 - x^2}}$.
24. Determine the domain and range of $f(x) = \frac{\sqrt{x + 4}}{x - 1}$.
25. Determine the domain and range of $f(x) = \frac{|x + 2|}{x^2}$.
26. Determine the domain and range of $f(x) = \sqrt{\frac{x - 1}{x + 3}}$.
27. Determine the domain and range of $f(x) = \frac{x}{|x| + 1}$.
28. Determine the domain and range of $f(x) = \sqrt{x + 1} - \sqrt{2 - x}$.
29. Determine the domain and range of $f(x) = \frac{1}{|x - 2| + |x + 2|}$.
30. The function $f(x) = \begin{cases} x^2, & x \leq 0, \\ 3x + 1, & x > 0, \end{cases}$ is given. Determine the domain and range of f .