

Math Worksheet: Domain of Functions (2)

1. Find the domain of the following functions.

A. $f(x) = \frac{\sqrt{x-2}}{\sqrt{3-x}}$

$$x-2 \geq 0 \text{ and } 3-x > 0$$

$$x \geq 2 \text{ and } x < 3$$

Domain $[2, 3)$

B. $g(x) = \frac{1}{\sqrt{x+2}-4}$

$$x+2 \geq 0 \text{ and } \sqrt{x+2} - 4 \neq 0$$

$$x \geq -2 \text{ and } \sqrt{x+2} \neq 4$$

$$x \geq -2 \text{ and } (\sqrt{x+2})^2 \neq (4)^2$$

$$x \geq -2 \text{ and } x \neq 14$$

Domain $[-2, 14) \cup (14, +\infty)$

C. $j(x) = \frac{2x+3}{\sqrt{-x^2-4x+5}}$

$$-x^2 - 4x + 5 > 0$$

$$x^2 + 4x - 5 < 0$$

$$(x+5)(x-1) < 0$$

Domain $(-5, 1)$