

Math 2143 - Brief Calculus with Applications

Homework #1 - 2008.01.15

Due Date - 2008.01.24

Solutions

Find the domains of the following functions.

1.

$$f(x) = \frac{2x}{x^2 - x - 6}$$

Domain = $\{x \mid x \text{ is a real number not equal to } 3 \text{ or } -2\}$

2.

$$g(w) = \frac{2w + 1}{\sqrt{w^2 + 1}}$$

Domain = \mathbb{R}

3.

$$s(v) = \sqrt{2v^2 - 5}$$

Domain = $\left\{v \mid v \leq -\sqrt{\frac{5}{2}} \text{ or } v \geq \sqrt{\frac{5}{2}}\right\}$

4.

$$t(y) = \frac{1}{\sqrt{2y^2 - 5}}$$

Domain = $\left\{v \mid v < -\sqrt{\frac{5}{2}} \text{ or } v > \sqrt{\frac{5}{2}}\right\}$

5.

$$r(x) = \frac{2x}{x^2 - x - 6} + \frac{\sqrt{x}}{x^2 + x - 6}$$

Domain = $\{x \mid x \geq 0 \text{ and } x \neq 2 \text{ and } x \neq 3\}$