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MODULE 4.2 - RATIONAL FUNCTIONS LEARNING OBJECTIVES

In this section, you will:

• Use arrow notation.

- Solve applied problems involving rational functions.
- Find the domains of rational functions.
- Identify vertical asymptotes.
- Identify horizontal asymptotes.

USING ARROW NOTATION

- State the definition of vertical asymptote.
- State the definition of horizontal asymptote.

SOLVING APPLIED PROBLEMS INVOLVING RATIONAL FUNCTIONS

• State the definition of rational function.

IDENTIFYING VERTICAL ASYMPTOTES OF RATIONAL FUNCTIONS

• State the definition of removable discontinuities of rational functions.

How To... Given a rational function, identify any vertical asymptotes of its graph.

IDENTIFYING HORIZONTAL ASYMPTOTES OF RATIONAL FUNCTIONS

- State the definition of horizontal asymptotes of rational functions.
- State the definition of intercepts of rational functions.

MODULE 4.2 - CLASS EXAMPLES

 $1. f(x) = \frac{x-1}{x+2}$

2.
$$p(x) = \frac{x^2 + 4}{x^2 - 2x - 8}$$

$$3. g(x) = \frac{x}{x^2 - 9}$$

$$4. f(x) = \frac{3x-4}{x^3 - 16x}$$

$$5. h(x) = \frac{x}{x^2 - x}$$

6.
$$g(x) = \frac{94-2x^2}{3x^2-12}$$

7.
$$w(x) = \frac{(x-1)(x+3)(x-5)}{(x+2)^2(x-4)}$$

8.
$$h(x) = \frac{2x^2 + x - 1}{x - 4}$$

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