

Name: _____

Take Home "Quiz" HW

Section 4.6 Self-Assessment (Answers on page 257)

1. **(Multiple Choice)** Determine the real zeros of $k(x) = \frac{x^2+5x+4}{x^2-9}$.

- (A) $x = -3, 3$ only (B) $x = -4, -1$ only (C) $x = -\frac{4}{9}$ only
(D) $x = 3$ only (E) $x = -4, -3, -1, 3$ only

2. Consider the rational function $p(x) = \frac{2x-7}{x+3}$. Find the domain, vertical asymptote(s), hole(s), zero(s), and horizontal or slant asymptote. (Write the word **NONE** if the particular feature does not exist for $p(x) = \frac{2x-7}{x+3}$.)

Domain: _____

Vertical Asymptote(s): _____

Hole(s): _____

Zero(s): _____

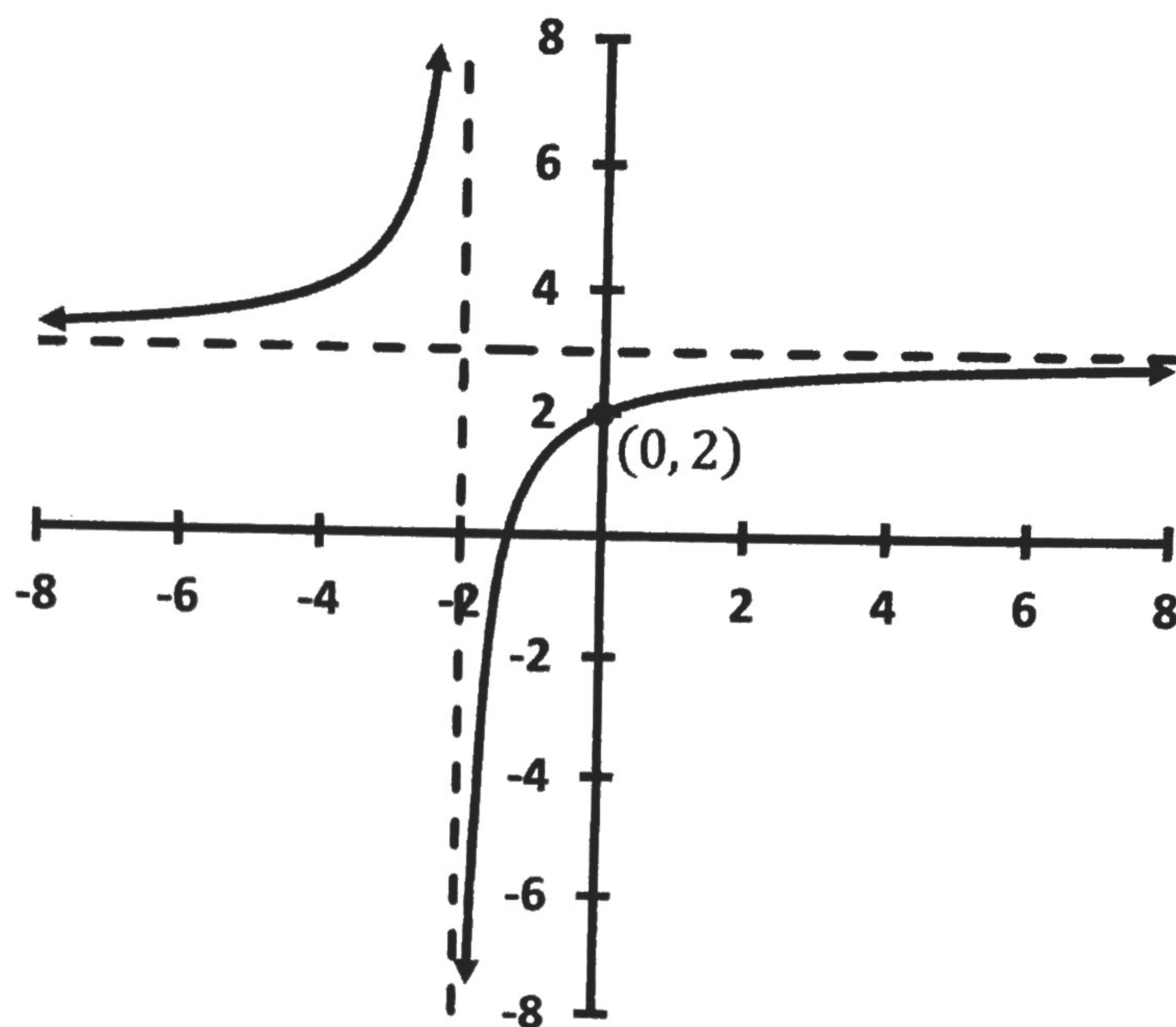
Horizontal Asymptote: _____

Slant Asymptote: _____

3. **(Multiple Choice)** Determine the vertical asymptotes and removable discontinuities (holes) for the rational function $f(x) = \frac{x^2+5x+6}{x^2-4}$.

- (A) Vertical Asymptotes at $x = -2, 2$ only
Removable Discontinuities at $x = -3, -2$ only
(B) Vertical Asymptote at $x = -2$ only
Removable Discontinuity at $x = 2$ only
(C) Vertical Asymptote at $x = 2$ only
Removable Discontinuities at $x = -2, 2$ only
(D) Vertical Asymptotes at $x = -2, 2$ only
Removable Discontinuity at $x = -2$ only
(E) Vertical Asymptote at $x = 2$ only
Removable Discontinuity at $x = -2$ only

4. Determine an equation of the rational function graphed below.



5. **(Multiple Choice)** Determine an equation for the horizontal or slant asymptote for the rational function $h(x) = \frac{2x^2+12x-4}{x+3}$.

- (A) $y = 2x$ (B) $y = 2$ (C) $y = 2x + 4$
(D) $y = 2x + 6$ (E) $y = 2x + 18$