Name: _____

5.3.D4 – Behavior of Rational Functions

Write the rational function in its equivalent factored form and reduced form (if applicable). Then identify the asymptotes, intercepts, and any holes.

$A(x) = \dfrac{x^2 + 2x}{x^2 - 4}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole:

$B(x) = \dfrac{x - 2}{x^2 - 2x}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole:

$f(x) = \dfrac{x^2 + x - 2}{x^2 + x - 20}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole:

$g(x) = \dfrac{x^2 - 5x + 4}{x^2 - x - 2}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole:

$J(x) = \dfrac{x^2 + x - 12}{x^2 - 3x - 10}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole:

$L(x) = \dfrac{x - 1}{x^2 - 1}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole:

$M(x) = \dfrac{x - 4}{x^2 - 5x + 4}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole:

$P(x) = \dfrac{x^2}{x^2 - 9}$

Factored Form	Reduced Form

Horizontal asymptote: $y =$	y-intercept:	Domain:
Vertical asymptote: $x =$	x-intercept:	Hole: