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.

	Factored Form	Reduced Form			
$A(x) = \frac{x^2 + 2x}{x^2 - 4}$		Reduced FORM	Horizontal asymptote: y =	y-intercept:	Domain:
Т			Vertical asymptote: x =	x-intercept:	Hole:
					<u> </u>
$B(x) = \frac{x-2}{x^2 - 2x}$	Factored Form	Reduced Form	Horizontal asymptote: y =	y-intercept:	Domain:
			Vertical asymptote: x =	x-intercept:	Hole:
	Factored Form	Reduced Form			
$f(x) = \frac{x^2 + x - 2}{x^2 + x - 20}$			Horizontal asymptote: y =	y-intercept:	Domain:
			Vertical asymptote: x =	x-intercept:	Hole;
	Fratewood Frame	De de ce d Come	L		L
$g(x) = \frac{x^2 - 5x + 4}{x^2 - x - 2}$	Factored Form	Reduced Form	Horizontal asymptote: y =	y-intercept;	Domain:
~ ~ L			Vertical asymptote: x =	x-intercept:	Hole:
	Factored Form	Reduced Form			<u>_</u>
$J(x) = \frac{x^2 + x - 12}{x^2 - 3x - 10}$		Reduced Form	Horizontal asymptote: y =	y-intercept;	Domain:
<i>x</i> 5 <i>x</i> 10			Vertical asymptote: x =	x-intercept:	Pt: Domain: pt: Hole: pt: Domain: pt: Hole: pt: Hole: pt: Hole: pt: Hole:
			L		
$L(x) = \frac{x-1}{x^2-1}$	Factored Form	Reduced Form	Horizontal asymptote: y =	y-intercept:	Domain:
			Vertical asymptote: x =	x-intercept:	Hole:
	Factored Form	Reduced Form			L
$M(x) = \frac{x-4}{x^2 - 5x + 4}$		Reduced Form	Horizontal asymptote: y =	y-intercept:	Domain:
$M(x) = \frac{1}{x^2 - 5x + 4}$					
$M(x) = \frac{1}{x^2 - 5x + 4}$			Vertical asymptote: x =	x-intercept:	Hole:
$M(x) = \frac{1}{x^2 - 5x + 4}$	Eastored Form	Paducad Form	x =		
$P(x) = \frac{x^2}{x^2 - 5x + 4}$	Factored Form	Reduced Form		x-intercept: y-intercept:	Hole: Hole: Domain:
	Factored Form	Reduced Form	x = Horizontal asymptote:		