

Characteristics of Ration Functions

Analyze each rational function.

	1	2	3	4
Characteristic	$y = \frac{2x - 1}{x - 7}$	$y = \frac{x^2 + 5x}{x^2 + 7x + 10}$	$y = \frac{x^2 - 7x + 12}{x^2 - 9}$	$y = \frac{x^2 + 3x + 2}{x^2 + 5x + 6}$
Factored form				
Reduced Form				
Domain (Set den = 0) All real numbers, $X \neq$				
Vertical Asymptote(s) <i>Analyze Denominator</i> Set den = 0				
HOLES Point(s) of Discontinuity <i>Simplify the Rational Function by factoring</i>				
Horizontal Asymptote(s) <i>Analyze Degrees of Polynomial (num/den) ($m < n$, $m = n$, $m > n$)</i>				
x-intercept(s) Set $y = 0$				
y-intercept Set $x = 0$				
Range				

	5	6	7	8
Characteristic	$y = \frac{x^2 + 4x - 12}{x^2 + 7x + 6}$	$y = \frac{x^2 + 2x - 3}{x - 5}$	$y = \frac{x^2 - 6x + 8}{x^2 - 16}$	$y = \frac{x^2 - 9}{x^2 - 6x + 9}$
Factored form				
Reduced Form				
Domain (Set den = 0) All real numbers, $x \neq$				
Vertical Asymptote(s) <i>Analyze Denominator</i> Set den = 0				
HOLES Point(s) of Discontinuity <i>Simplify the Rational Function by factoring</i>				
Horizontal Asymptote(s) <i>Analyze Degrees of Polynomial (num/den) ($m < n, m = n, m > n$)</i>				
x-intercept(s) Set $y = 0$				
y-intercept Set $x = 0$				
Range				

	9	10	11	12
Characteristic	$y = \frac{x - 1}{x^2 + 3x - 4}$	$y = \frac{x + 5}{x^2 + 6x + 5}$	$y = \frac{2x + 3}{x - 1}$	$y = \frac{x^2 - x - 6}{x^2 + x - 2}$
Factored form				
Reduced Form				
Domain (Set den = 0) All real numbers, $X \neq$				
Vertical Asymptote(s) <i>Analyze Denominator</i> Set den = 0				
HOLES Point(s) of Discontinuity <i>Simplify the Rational Function by factoring</i>				
Horizontal Asymptote(s) <i>Analyze Degrees of Polynomial (num/den) ($m < n, m = n, m > n$)</i>				
x-intercept(s) Set $y = 0$				
y-intercept Set $x = 0$				
Range				

	13	14	15	16
Characteristic	$y = \frac{x^2 - 4x + 3}{x^2 - x - 6}$	$y = \frac{x^2 - x - 6}{x^2 + 3x + 2}$	$y = \frac{x + 1}{x^2 - x - 6}$	$y = \frac{x^2 + 6x - 7}{x - 1}$
Factored form				
Reduced Form				
Domain (Set den = 0) All real numbers, $X \neq$				
Vertical Asymptote(s) <i>Analyze Denominator</i> Set den = 0				
HOLES Point(s) of Discontinuity <i>Simplify the Rational Function by factoring</i>				
Horizontal Asymptote(s) <i>Analyze Degrees of Polynomial (num/den) ($m < n, m = n, m > n$)</i>				
x-intercept(s) Set $y=0$				
y-intercept Set $x=0$				
Range				