

Rational Function Worksheet

Name _____

Date _____

Period _____

Rational Function	Holes	Vertical Asymptote	Horizontal Asymptote	Slant Asymptote
$h(x) = \frac{2x-2}{2x+2} \cdot \frac{2(x-1)}{2(x+1)}$	none	$x = -1$	$y = 1$	none
$h(x) = \frac{2x}{2x(x-5)}$	$(0, -\frac{1}{5})$	$x = 5$	$y = 0$	none
$g(x) = \frac{(3x-1)(x+2)}{x+2}$	$(-2, -7)$	none	none	none
$g(x) = \frac{(x+1)}{x^2+4x-21} \cdot \frac{1}{(x+7)(x-3)}$	none	$x = -7$ $x = 3$	$y = 0$	none
$t(x) = \frac{3x-1}{9x^2-36} \cdot \frac{1}{9(x-2)(x+2)}$	none	$x = -2$ $x = 2$	$y = 0$	none
$a(x) = \frac{7x+8}{x^2-10x+25} \cdot \frac{1}{(x-5)^2}$	none	$x = 5$	$y = 0$	none
$a(x) = \frac{7x+1}{5x^2+3}$	none	none	$y = 0$	none
$v(x) = \frac{x^2-4}{x^2+4} \cdot \frac{(x-2)(x+2)}{(x-2)(x+2)}$	none	none	$y = 1$	none
$v(x) = \frac{x(x-4)}{x^3-x^2-20x} \cdot \frac{x^2-4x}{x(x-5)(x+4)}$	$(0, \frac{1}{5})$	$x = -4$ $x = 5$	$y = 0$	none
$g(x) = \frac{x(5x-3)}{x^3-8x^2+16x} \cdot \frac{5x^2-3x}{x(x-4)(x-4)}$	$(0, -\frac{3}{16})$	$x = 4$	$y = 0$	none
$t(x) = \frac{5x^2-10x+1}{x-2}$	none	$x = 2$	none	$y = 5x$
$t(x) = \frac{x^2-x}{x+1} \cdot \frac{x(x-1)}{x(x-1)}$	none	$x = -1$	none	$y = x - 2$
$g(x) = \frac{(x+3)(x-1)}{x^2+x-6} \cdot \frac{1}{x+1}$	none	$x = -1$	none	$y = x$
$f(x) = \frac{3x^2-2x+2}{x-1}$	none	$x = 1$	none	$y = 3x + 1$

$5x^2+3=0$
 $5x^2=-3$
 $x^2=-\frac{3}{5}$
 no real sol.

$$\begin{array}{r} 2 \overline{) 5} \quad -10 \quad 1 \\ \underline{10} \quad 0 \\ 5 \quad 90 \quad \underline{11} \end{array}$$

$$\begin{array}{r} -1 \overline{) 1} \quad -1 \quad 0 \\ \underline{-1} \quad 2 \\ 1 \quad -2 \quad \underline{12} \end{array}$$

$$\begin{array}{r} -1 \overline{) 1} \quad 1 \quad -6 \\ \underline{-1} \quad 0 \\ 1 \quad 0 \quad \underline{-6} \end{array}$$

$$\begin{array}{r} 1 \overline{) 3} \quad -2 \quad 2 \\ \underline{3} \quad 3 \quad 1 \\ 3 \quad 1 \quad \underline{13} \end{array}$$