

Name \_\_\_\_\_

Date \_\_\_\_\_

Find the vertical &amp; horizontal asymptotes, x &amp; y intercepts, and holes for the following rational functions.

1.  $f(x) = \frac{1}{x-2}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

2.  $f(x) = \frac{x^2 - x - 12}{x}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

3.  $f(x) = \frac{x^2 - 5x + 6}{x^2 - 4x + 3}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

4.  $f(x) = \frac{2x^2 - 4x}{x^2 - 2x - 3}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

5.  $f(x) = \frac{1}{x^2 - 4}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

6.  $f(x) = \frac{x^2 - x}{x+1}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

7.  $f(x) = \frac{x^3 + 3x^2}{x^3 + 3x^2 - 4x - 12}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

8.  $f(x) = \frac{x-1}{x^2-4}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

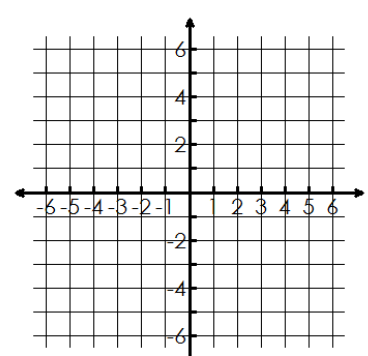
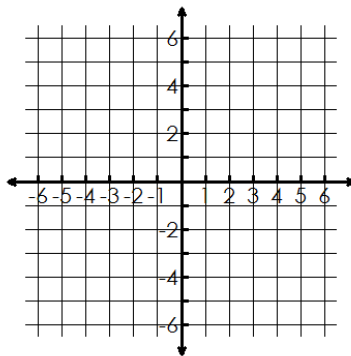
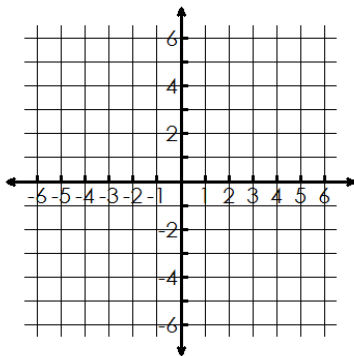
holes: \_\_\_\_\_ Slant: \_\_\_\_\_

9.  $f(x) = \frac{x^2 - x - 2}{x-1}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_



10.  $f(x) = \frac{5}{x+3}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

11.  $f(x) = \frac{1-5x}{1+2x}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

12.  $f(x) = \frac{x^3}{x^2-1}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

13.  $f(x) = \frac{2x^2-11x+12}{x+4}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

14.  $f(x) = \frac{x^2-x}{x+1}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

15.  $f(x) = \frac{x+4}{4x^2+4x-48}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

16.  $f(x) = \frac{x^3+x^2-6x}{-3x^3+6x^2+9x}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

17.  $f(x) = \frac{-4}{x-3}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

18.  $f(x) = \frac{x^2-2x-3}{x-2}$

Vert: \_\_\_\_\_ Hor: \_\_\_\_\_

x-Int.: \_\_\_\_\_ y-int: \_\_\_\_\_

holes: \_\_\_\_\_ Slant: \_\_\_\_\_

