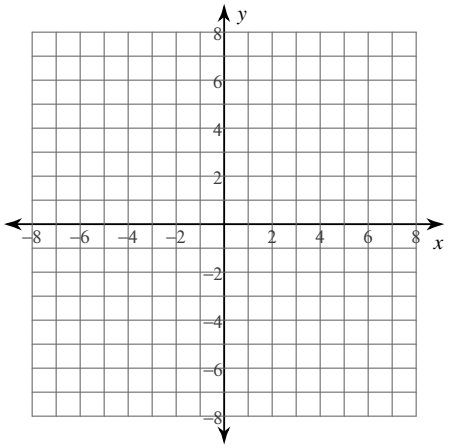
Algebra III/Trigonometry Name_____

4.4: Graphing Rational Functions Practice

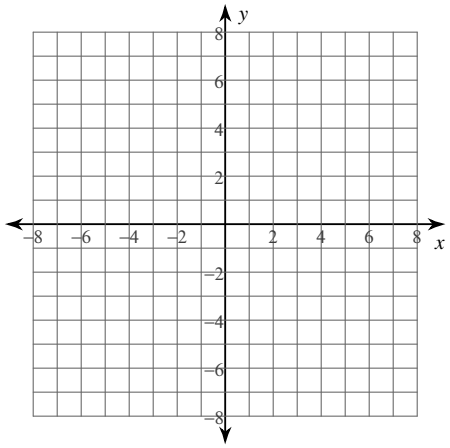
Date_____ Period____

Identify the holes, vertical asymptotes, x-intercepts, horizontal asymptote, and domain of each. Then sketch the graph.

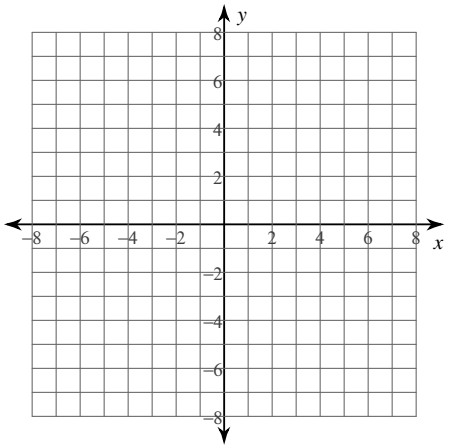
1) $f(x) = \dfrac{4}{x-3}$



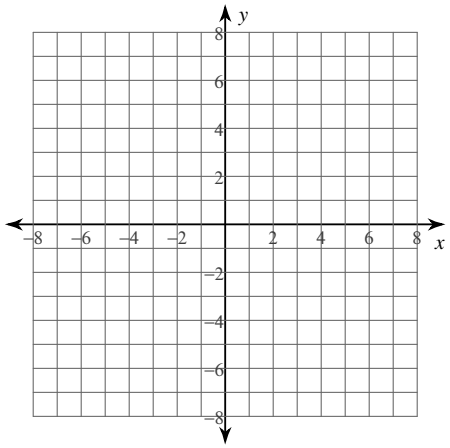
2) $f(x) = \dfrac{x^2+7x+12}{-2x^2-2x+12}$



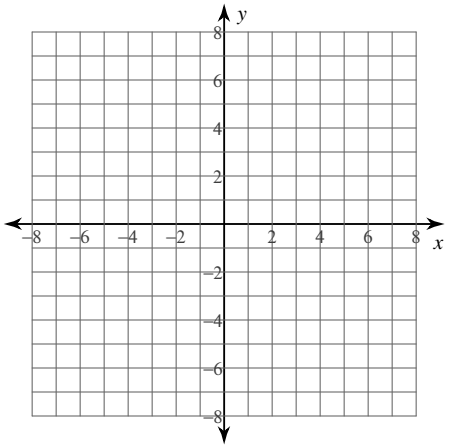
3) $f(x) = \dfrac{1}{-x+4}$



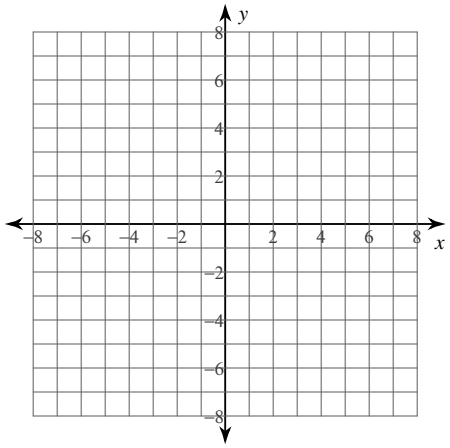
4) $f(x) = \dfrac{-3x+12}{x^2-3x-4}$



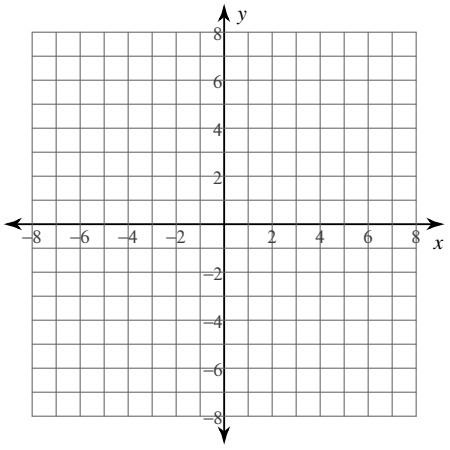
5) $f(x) = \dfrac{-2x^2 + 4x + 16}{x^2 - 5x + 4}$



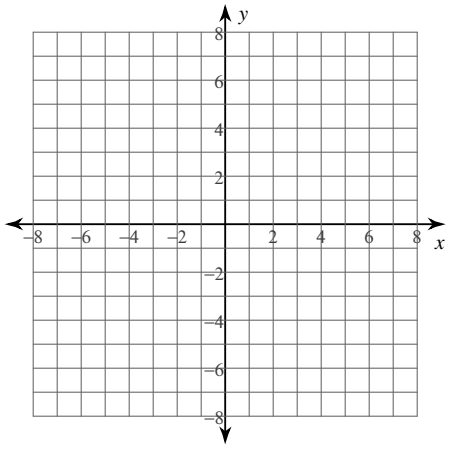
6) $f(x) = \dfrac{x^2 - 3x}{2x^2 + 2x - 12}$



7) $f(x) = \dfrac{3x + 6}{x + 3}$

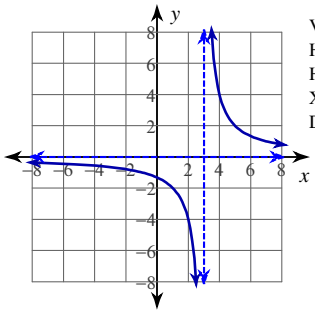


8) $f(x) = \dfrac{x^2 + 5x + 4}{x^2 - 1}$



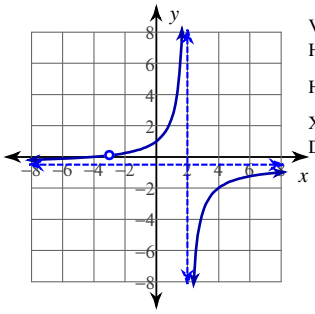
Answers to 4.4: Graphing Rational Functions Practice (ID: 1)

1)



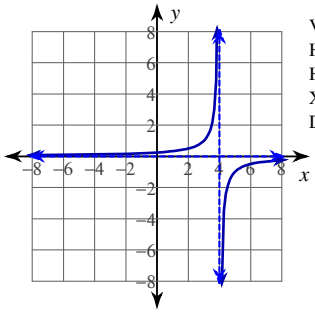
Vertical Asym.: $x = 3$
Holes: None
Horz. Asym.: $y = 0$
X-intercepts: None
Domain:
All reals except 3

2)



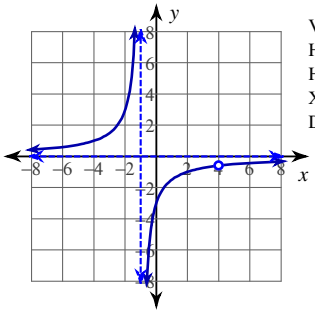
Vertical Asym.: $x = 2$
Holes: $x = -3$
Horz. Asym.: $y = -\frac{1}{2}$
X-intercepts: -4
Domain:
All reals except 2, -3

3)



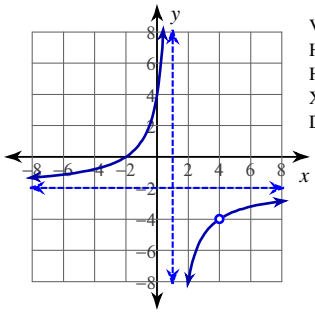
Vertical Asym.: $x = 4$
Holes: None
Horz. Asym.: $y = 0$
X-intercepts: None
Domain:
All reals except 4

4)



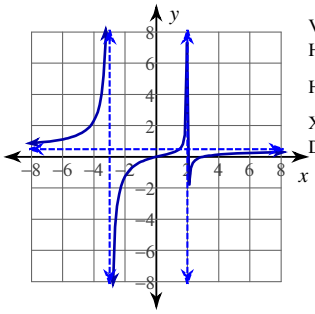
Vertical Asym.: $x = -1$
Holes: $x = 4$
Horz. Asym.: $y = 0$
X-intercepts: None
Domain:
All reals except -1, 4

5)



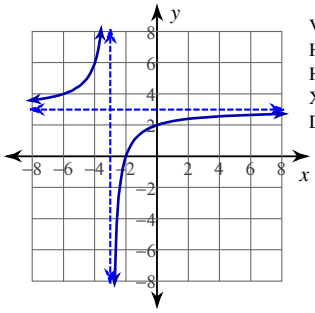
Vertical Asym.: $x = 1$
Holes: $x = 4$
Horz. Asym.: $y = -2$
X-intercepts: -2
Domain:
All reals except 1, 4

6)



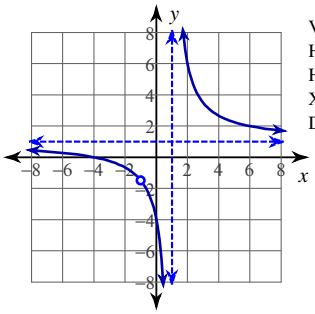
Vertical Asym.: $x = -3$, $x = 2$
Holes: None
Horz. Asym.: $y = \frac{1}{2}$
X-intercepts: 0, 3
Domain:
All reals except -3, 2

7)



Vertical Asym.: $x = -3$
Holes: None
Horz. Asym.: $y = 3$
X-intercepts: -2
Domain:
All reals except -3

8)



Vertical Asym.: $x = 1$
Holes: $x = -1$
Horz. Asym.: $y = 1$
X-intercepts: -4
Domain:
All reals except 1, -1