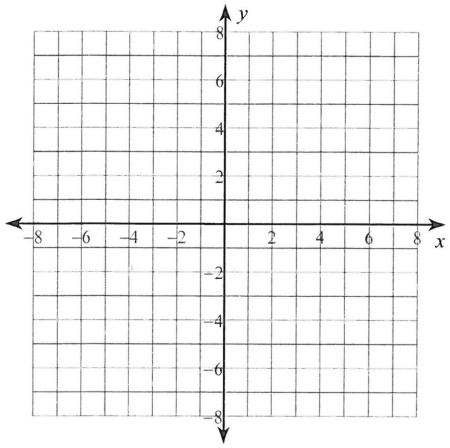
Algebra 2 Name_____ ID:

Assignment

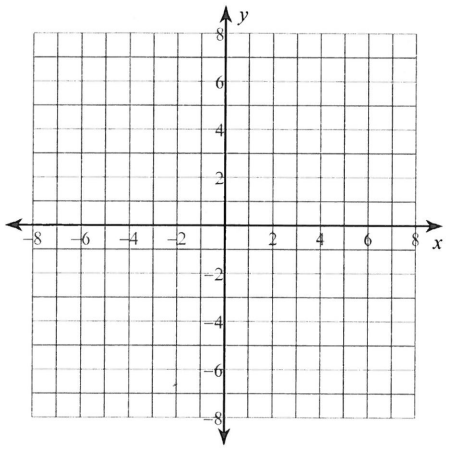
Date_____ Period___

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

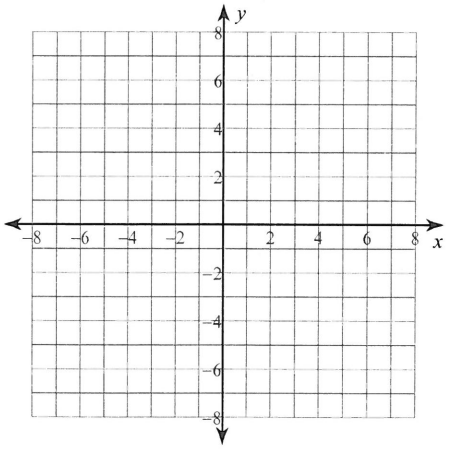
1) $f(x) = -\dfrac{4}{x+1}$



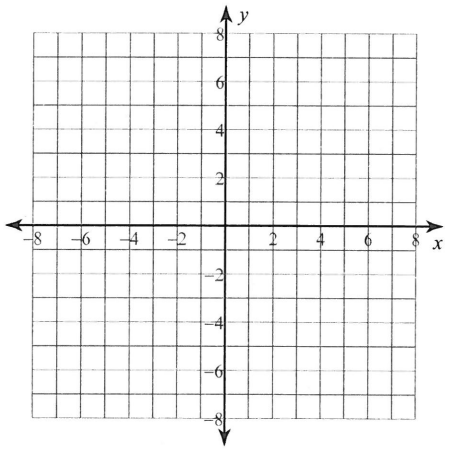
2) $f(x) = \dfrac{1}{x+3} + 3$



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

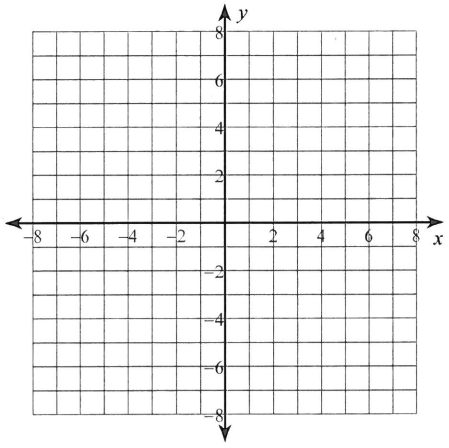


4) $f(x) = -\dfrac{2}{x+3} - 3$

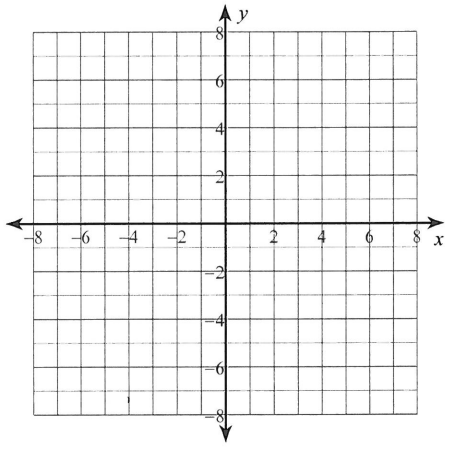


Identify the vertical asymptotes, x-intercepts, horizontal asymptote, and domain of each. Then sketch the graph.

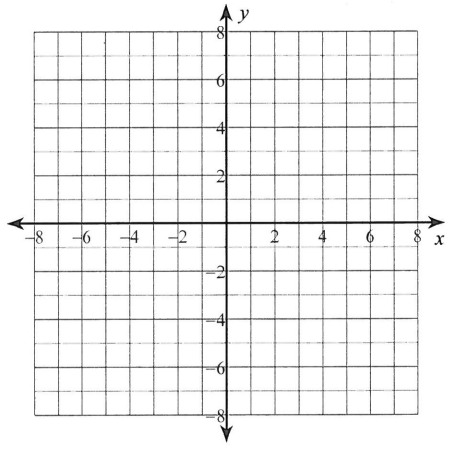
5) $f(x) = \dfrac{x-3}{2x+8}$



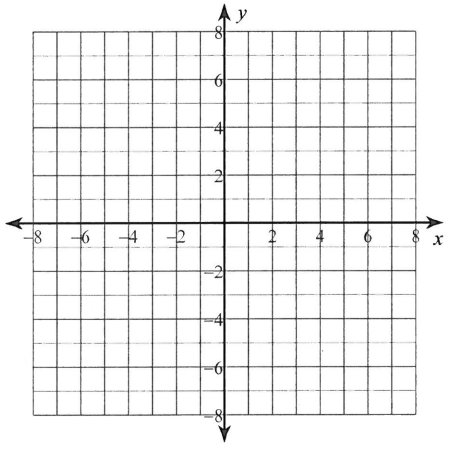
6) $f(x) = \dfrac{x^2+3x}{-x^2+2x+3}$



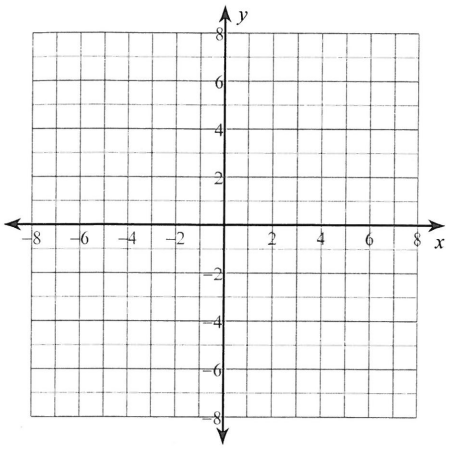
7) $f(x) = \dfrac{3x+12}{x+1}$



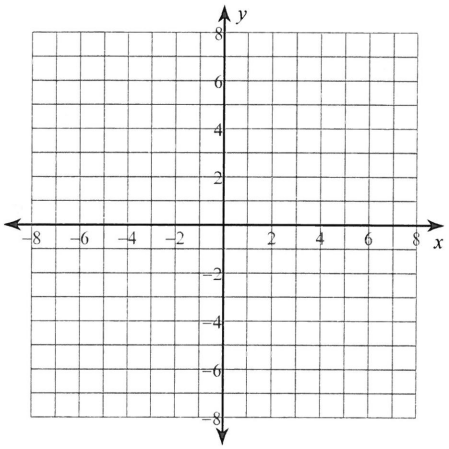
8) $f(x) = \dfrac{x-2}{4x-4}$



9) $f(x) = \dfrac{x+4}{3x^2 - 9x}$

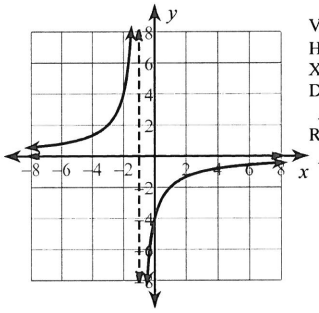


10) $f(x) = -\dfrac{2}{x^2 - 4}$



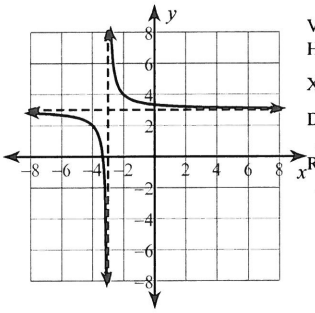
Answers to Assignment (ID: 1)

1)



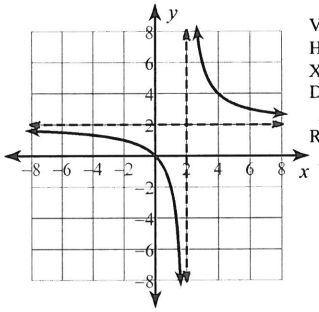
Vertical Asym.: $x = -1$
Horz. Asym.: $y = 0$
X-intercepts: None
Domain:
All reals except -1
Range:
All reals except 0

2)



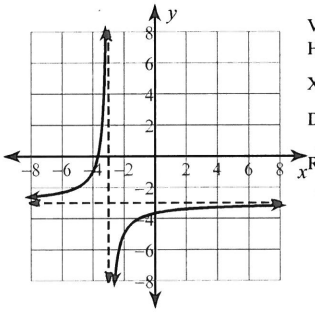
Vertical Asym.: $x = -3$
Horz. Asym.: $y = 3$
X-intercepts: $-\frac{10}{3}$
Domain:
All reals except -3
Range:
All reals except 3

3)



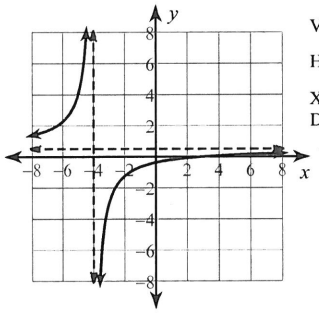
Vertical Asym.: $x = 2$
Horz. Asym.: $y = 2$
X-intercepts: 0
Domain:
All reals except 2
Range:
All reals except 2

4)



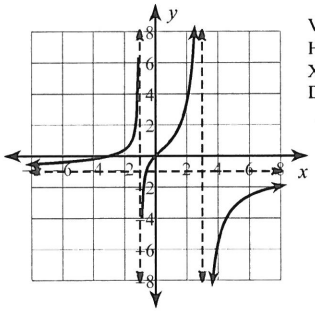
Vertical Asym.: $x = -3$
Horz. Asym.: $y = -3$
X-intercepts: $-\frac{11}{3}$
Domain:
All reals except -3
Range:
All reals except -3

5)



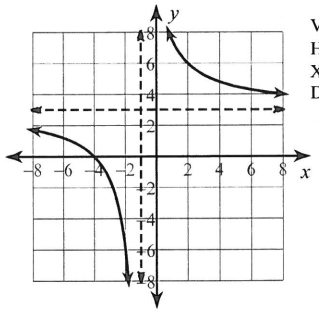
Vertical Asym.: $x = -4$
Horz. Asym.: $y = \frac{1}{2}$
X-intercepts: 3
Domain:
All reals except -4

6)



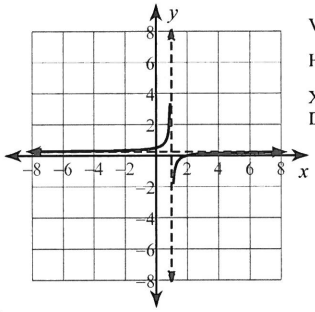
Vertical Asym.: $x = 3$, $x = -1$
Horz. Asym.: $y = -1$
X-intercepts: 0, -3
Domain:
All reals except 3, -1

7)



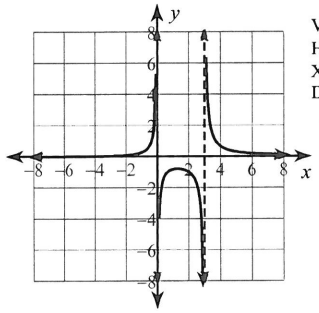
Vertical Asym.: $x = -1$
Horz. Asym.: $y = 3$
X-intercepts: -4
Domain:
All reals except -1

8)



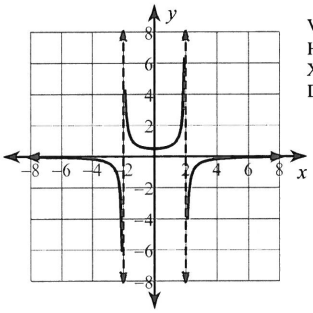
Vertical Asym.: $x = 1$
Horz. Asym.: $y = \frac{1}{4}$
X-intercepts: 2
Domain:
All reals except 1

9)



Vertical Asym.: $x = 0$, $x = 3$
Horz. Asym.: $y = 0$
X-intercepts: -4
Domain:
All reals except 0, 3

10)



Vertical Asym.: $x = 2$, $x = -2$
Horz. Asym.: $y = 0$
X-intercepts: None
Domain:
All reals except 2, -2