Math 3 Name_____ ID: 1

4-8 Graphing Rational Functions

Date_____ Period____

Identify the domain of each.

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

2) $f(x) = \dfrac{x^3 + 2x^2 - 8x}{-4x^2 - 12x + 16}$

Identify the holes and domain of each.

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

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

Identify the vertical asymptotes and domain of each.

5) $f(x) = \dfrac{x^3 + x^2 - 12x}{2x^2 - 8}$

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

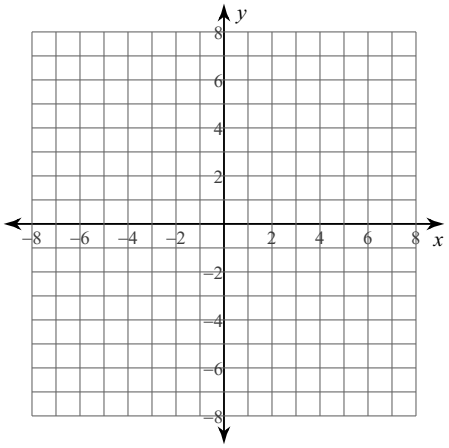
Identify the horizontal asymptote of each.

7) $f(x) = \dfrac{4x - 8}{x^2 - 9}$

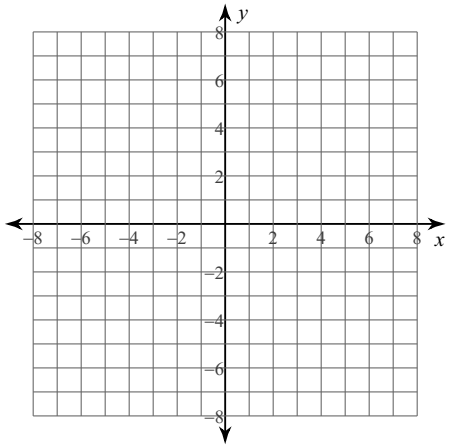
8) $f(x) = \dfrac{2x^3 + 12x^2 + 16x}{x^3 + 5x^2 + 6x}$

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

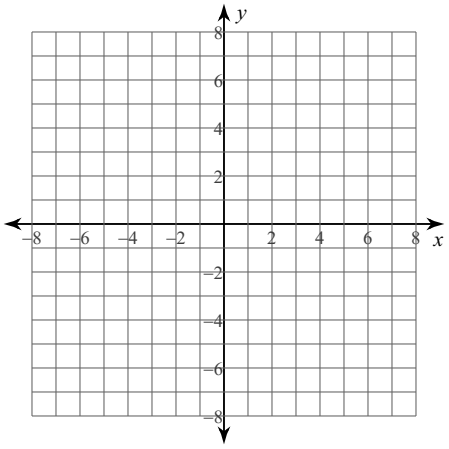
9) $f(x) = \dfrac{1}{x - 1}$



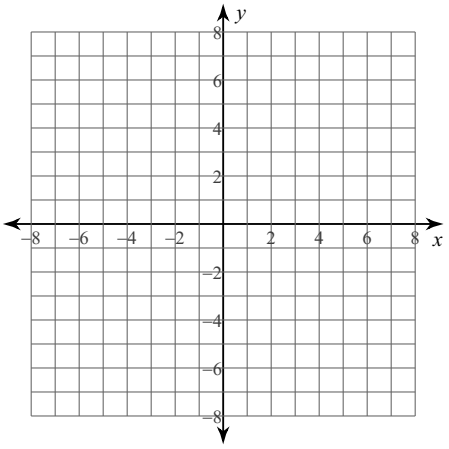
10) $f(x) = \dfrac{x}{x + 2}$



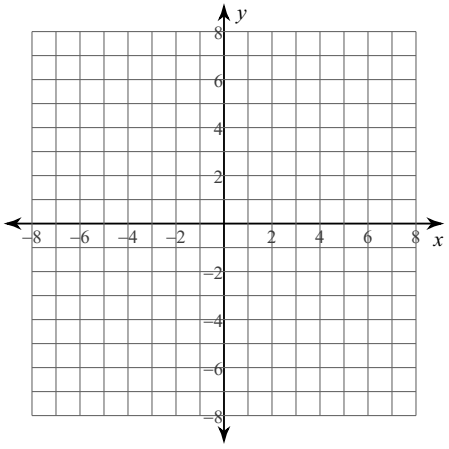
11) $f(x) = -\dfrac{1}{x+3}$



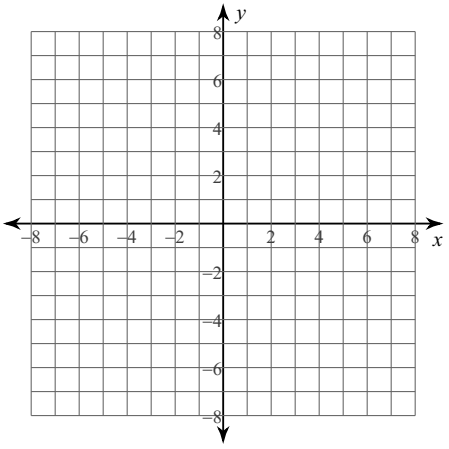
12) $f(x) = -\dfrac{4}{x+1}$



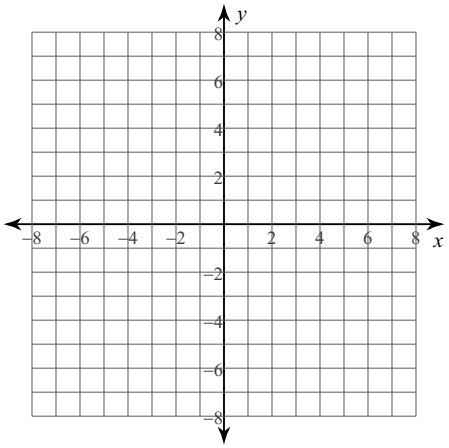
13) $f(x) = \dfrac{x-4}{x+2}$



14) $f(x) = \dfrac{-2x^2 - 10x - 8}{x^2 + 2x - 8}$



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



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