Name: _____

Rational Functions

1) Find the domain of the function and express it as an inequality. Then write the domain of the function in interval notation. Write the equation of the vertical asymptote(s) of the function.

1) $f(x) = \dfrac{10}{x+5}$

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

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

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

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

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

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

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

9) $f(x) = \dfrac{x-4}{x^2-6x}$

10) $f(x) = \dfrac{x^2+10x+25}{5-x}$

11) $f(x) = \dfrac{x^2-7x-18}{5x}$

12) $f(x) = \dfrac{2x}{x^2-25}$

13) $f(x) = \dfrac{x+1}{x^2-16}$

2) Find all vertical and horizontal asymptotes of the graph of each rational function

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

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

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

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

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

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