

Math 3 HW - Graphing Rational Functions

Name key Spr 17

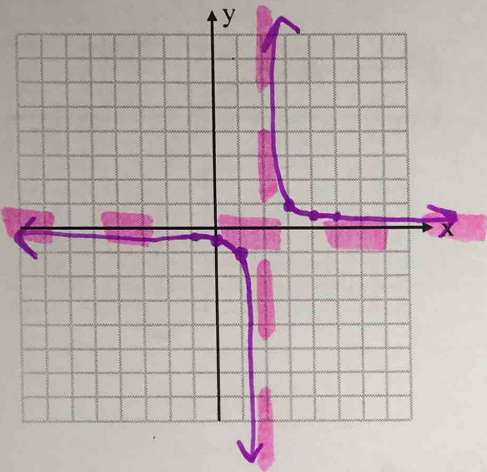
For each function, find the vertical asymptote, horizontal asymptote, any holes, and graph.

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

VA: $x=2$

HA: $y=0$

Hole: none

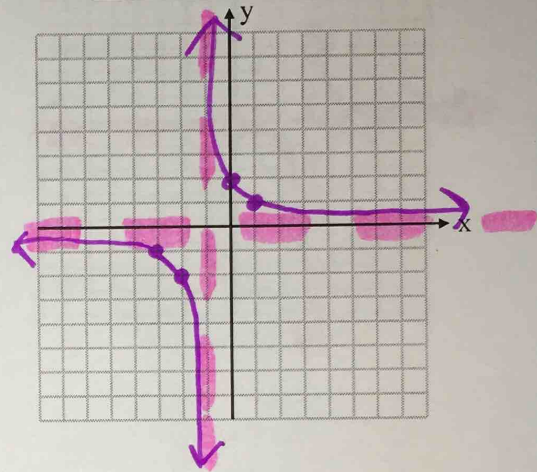


2. $f(x) = \frac{2}{x+1}$

VA: $x=-1$

HA: $y=0$

Hole: none

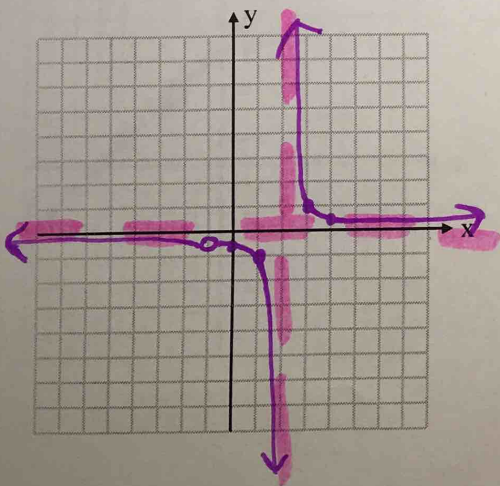


3. $f(x) = \frac{x+2}{x^2-4}$ $\frac{x+2}{(x+2)(x-2)}$

VA: $x=2$

HA: $y=0$

Hole: $x=-2$

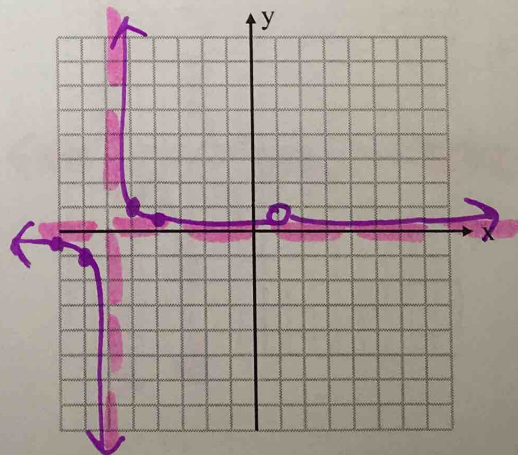


4. $f(x) = \frac{x-1}{x^2+5x-6}$ $\frac{x-1}{(x+6)(x-1)}$

VA: $x=-6$

HA: $y=0$

Hole: $x=1$

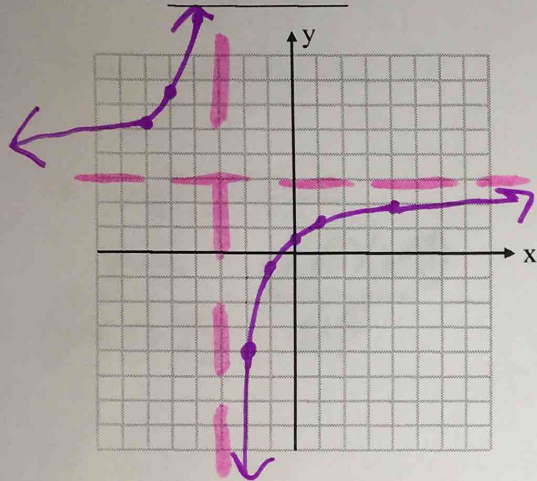


$$5. f(x) = \frac{3x+2}{x+3}$$

VA: $x = -3$

HA: $y = 3$

Hole: none

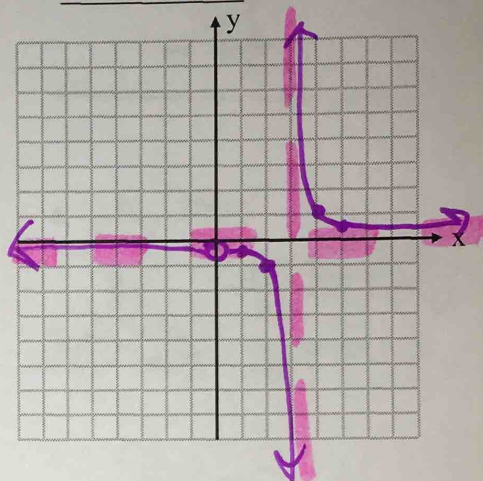


$$6. f(x) = \frac{x}{x^2 - 3x} = \frac{x}{x(x-3)}$$

VA: $x = 3$

HA: $y = 0$

Hole: $x = 0$



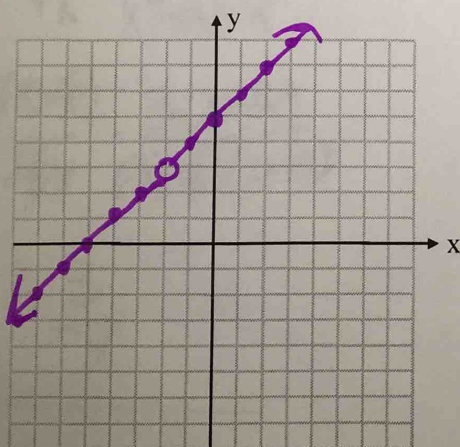
$$7. f(x) = \frac{x^2 + 7x + 10}{x + 2}$$

$$\frac{(x+5)(x+2)}{x+2}$$

VA: none

HA: none

Hole: $x = -2$



$$8. f(x) = \frac{3}{x^2 + 9x + 18}$$

$$\frac{3}{(x+6)(x+3)}$$

VA: $x = -6, x = -3$

HA: $y = 0$

Hole: none

