

Graph and give the requested information.

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

VA: none
 HA: none
 x-int: (-2, 0)
 y-int: (0, 2)
 SA: none
 holes: (2, 4)

2. $f(x) = \frac{x^2 - 9}{x + 1}$

VA: x = -1
 HA: none
 x-int: (±3, 0)
 y-int: (0, -9)
 SA: y = x - 1
 holes: none

$$\begin{array}{r} x-1 \\ x+1 \overline{) x^2 + 0x - 9} \\ \underline{-(x^2 + x)} \\ -x - 9 \end{array}$$

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

VA: x = ±1
 HA: y = 0
 x-int: (0, 0)
 y-int: (0, 0)
 SA: none
 holes: none

x	y
-2	-2/3
-1/2	1/3
1/2	-2/3
2	2/3

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

VA: x = 1
 HA: none
 x-int: (0, 0)
 y-int: (0, 0)
 SA: y = x + 1
 holes: none

x	y
2	4

$$\begin{array}{r} x+1 \\ x-1 \overline{) x^2} \\ \underline{-(x^2 - x)} \\ x \end{array}$$

5. Write the equation of a rational function given:

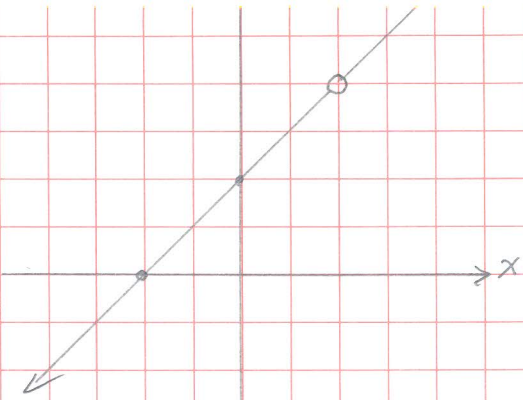
a) VA: x = 7 HA: y = -2

$$f(x) = \frac{-2x}{x-7}$$

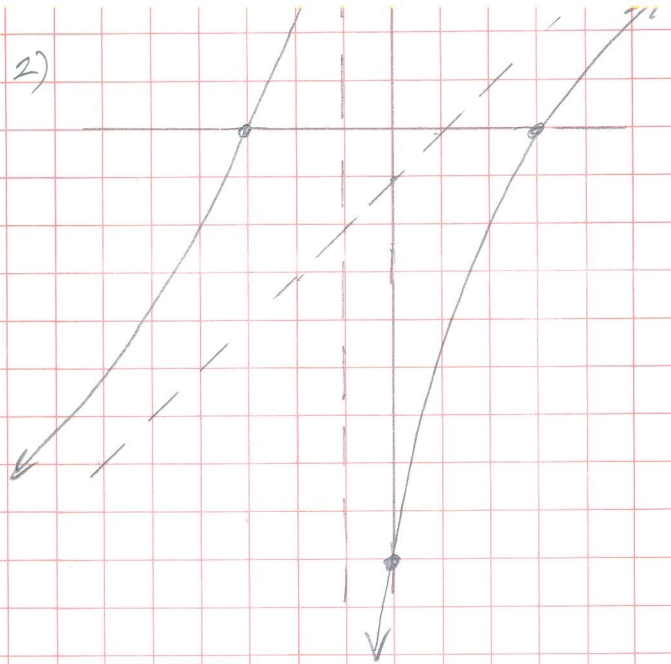
b) VA: x = 2, x = -1 HA: y = 0 zero at -5

$$f(x) = \frac{(x+5)}{(x-2)(x+1)}$$

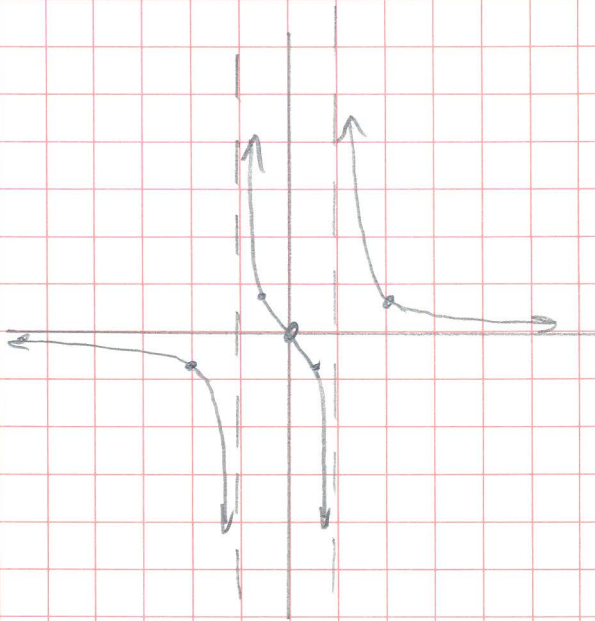
1)



2)



3)



4)

