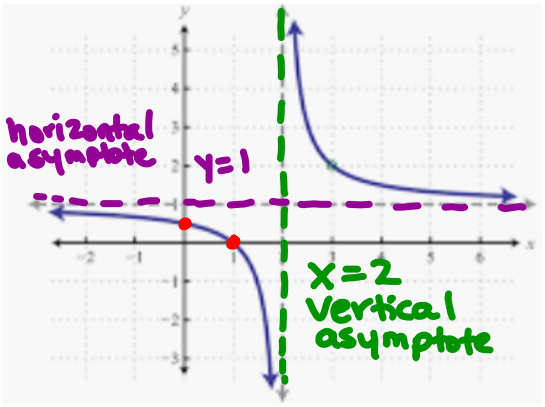
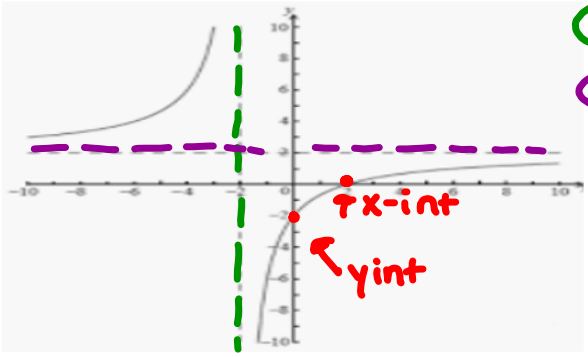


Vertical asymptote x=2

Horizontal asymptote y=1

x-intercept(s) (1,0) ordered pair

y-intercept (0,0.5)

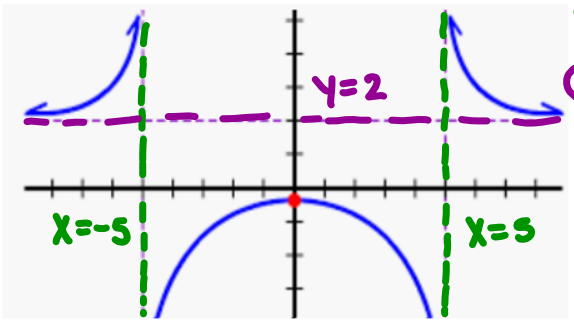


Vertical asymptote x=-2

Horizontal asymptote y=2

x-intercept(s) (2,0)

y-intercept (0,-2)

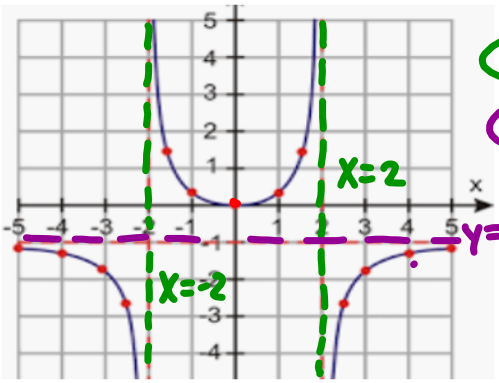


Vertical asymptote X=5 X=-5

Horizontal asymptote Y=2

x-intercept(s) none

y-intercept (0, -0.5)



vertical asymptote X=2 X=-2

Horizontal asymptote Y=-1

x-intercept(s) (0,0)

y-intercept (0,0)

Notes #1: Graphing Rational Functions

Asymptotes — dashed boundary lines the graph approaches but does not cross.

Vertical ↕ $x = \#$ — Come from your excluded values

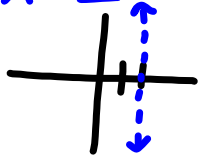
Find the **vertical asymptotes** / **excluded values**

denominator → bottom

① $\frac{1}{x-2}$

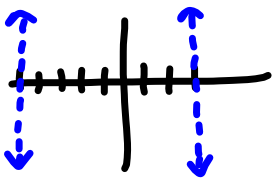
$x - 2 = 0$
$+2 \quad +2$

$x = 2$



② $\frac{x+1}{(x+5)(x-3)}$

$x = -5 \quad x = 3$



③ $\frac{x^2}{x^2-16}$

$(x+4)(x-4)$

$x = -4 \quad x = 4$