

10-26-16

SLANTS & HOLES

(EX1) Sketch the graph of

$$f(x) = \frac{x^2 - 9}{x^2 - 2x - 3}$$

Simplify

$$f(x) = \frac{(x+3)(\cancel{x-3})}{(x+1)(\cancel{x-3})}$$

HOLE @
 $x-3=0$
 $x=3$

(VA) $x+1=0$
 $x = -1$

(HA) $n=m$
 $y = \frac{1}{1}$

y-intercepts

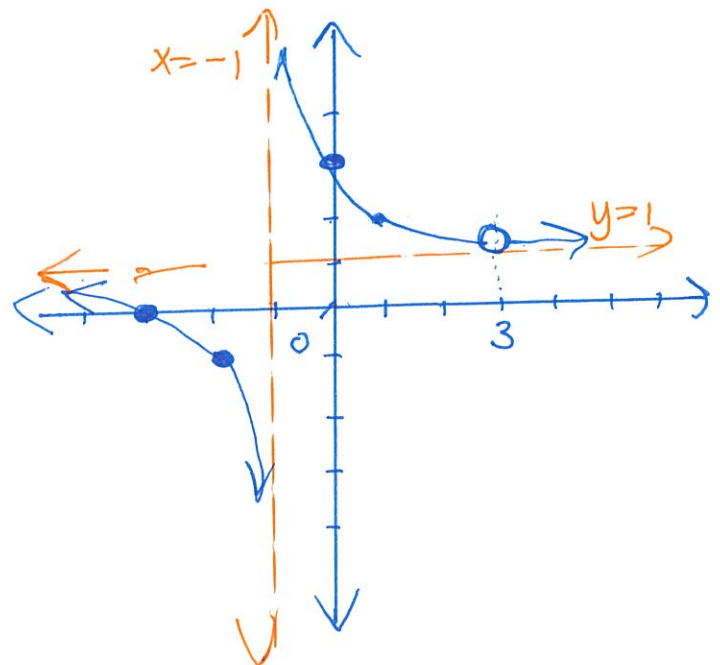
~~$f(0) = 0^2 - 9$~~
 $f(0) = \frac{0+3}{0+1} = 3$
 $(0, 3)$

x-intercepts

$x+3=0$
 $x = -3$
 $(-3, 0)$

Add. points

x	f(x)
-2	-1
1	2



Ex2) Sketch the graph of

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

Simplify

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

(VA)

$$x+1=0$$

$$x = -1$$

(HA)

$$n > m$$

NO HA

SLANT (SA)

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

$$y = x - 2 \quad (SA)$$

y-intercept

$$f(0) = \frac{0^2 - 0}{0+1}$$

$$(0, 0)$$

x-intercept

$$0 = x^2 - x$$

$$0 = x(x-1)$$

$$0 = x \quad 0 = x-1$$

$$1 = x$$

$$(0, 0) \quad (1, 0)$$

Add. points

x	f(x)
-2	-6
-3	-6

