

Graph the following. Make sure to label any holes, asymptotes, etc.

$$1) f(x) = \frac{3x}{x(x-4)} = \frac{3}{x-4} \quad \begin{array}{l} x=0 \\ 3=0 \\ x-4=0 \end{array}$$

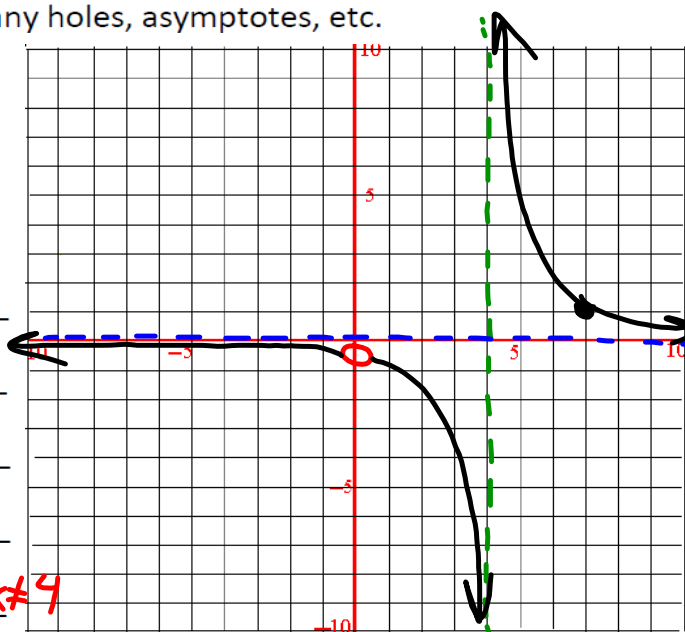
Hole(s):  $(0, -\frac{3}{4})$

Vertical Asymptote(s):  $x=4$

Horizontal Asymptote:  $y=0$

X-int: none

Y-int: none Domain:  $\mathbb{R} \ x \neq 0 \ x \neq 4$



$$\frac{3}{7-4} = \frac{3}{3} = 1 \quad (7, 1)$$

Graph the following. Make sure to label any holes, asymptotes, etc.

$$2) g(x) = \frac{2x^2 - 8}{x^2 - 2x - 3} = \frac{2(x-2)(x+2)}{(x-3)(x+1)}$$

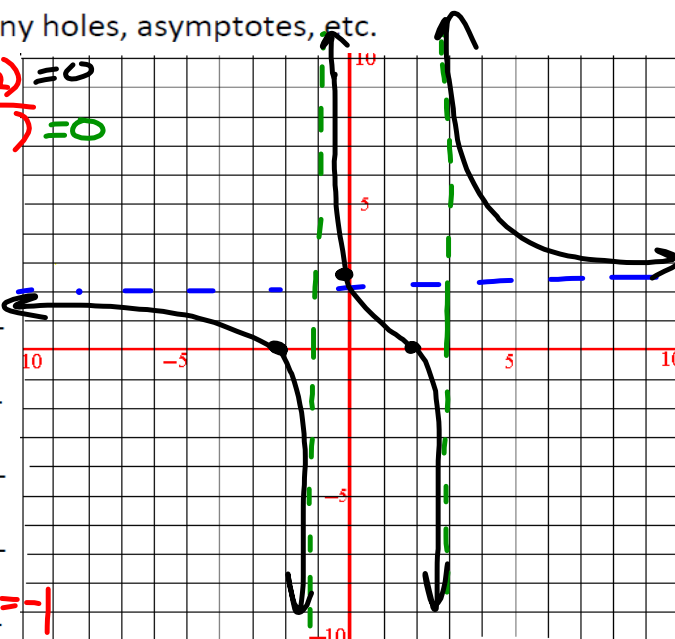
Hole(s): None

Vertical Asymptote(s):  $x=3$   $x=-1$

Horizontal Asymptote:  $y=2$

X-int:  $(2,0)$   $(-2,0)$

Y-int:  $(0, \frac{2}{3})$  Domain:  $\mathbb{R} \ x \neq 3 \ x \neq -1$



Graph the following. Make sure to label any holes, asymptotes, etc.

$$3) h(x) = \frac{x^2 - 2x - 15}{x^2 + x - 6} = \frac{(x-5)(x+3)}{(x-2)(x+3)}$$

$$x+3=0$$

$$x=-3$$

$$x-5=0$$

$$x-2=0$$

Hole(s): @ (-3, 5/5)

Vertical Asymptote(s): x=2

Horizontal Asymptote: y=1

X-int: (5, 0)

Y-int: (0, 2/5) Domain:

