

Algebra 2
8.2-8.3 Mixed Graphing

Name: Key

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

1) $f(x) = \frac{3x}{x(x-4)} = \frac{3}{x-4}$

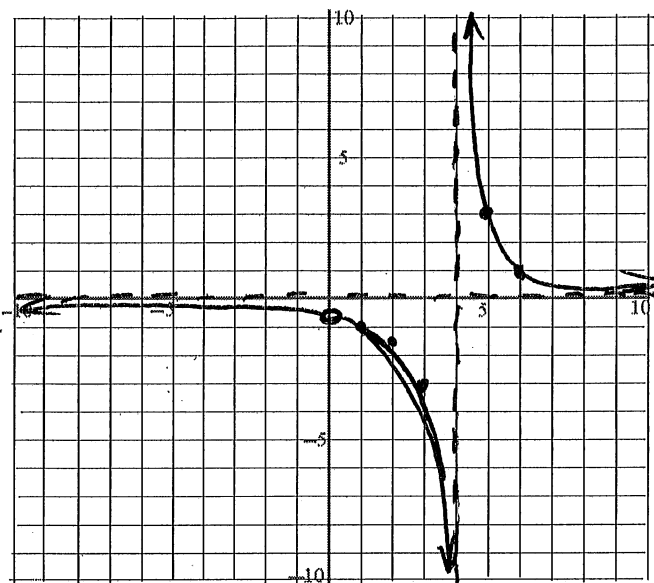
Hole(s): $(0, -\frac{3}{4})$

Vertical Asymptote(s): $x=4$

Horizontal Asymptote(s): $y=0$

X-int: None

Y-int: None Domain: $\mathbb{R}; x \neq 4, 0$



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

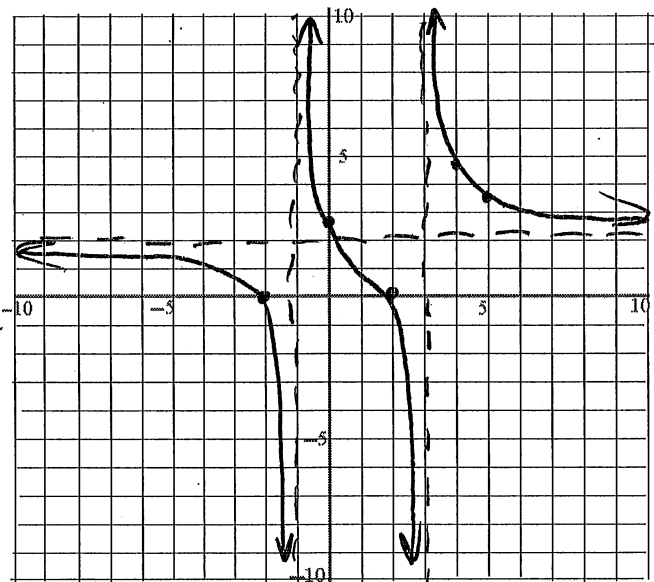
Hole(s): None

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

Horizontal Asymptote(s): $y=2$

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

Y-int: $(0, \frac{8}{3})$ Domain: $\mathbb{R}; x \neq 3, -1$



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

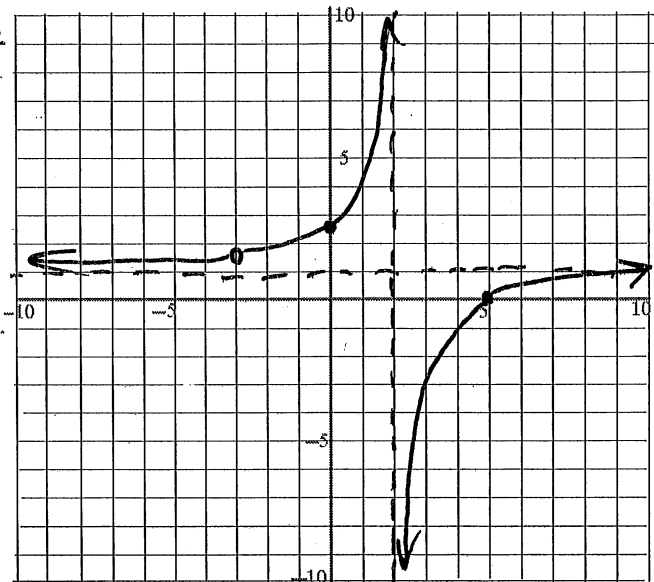
Hole(s): $(-3, \frac{8}{5})$

Vertical Asymptote(s): $x=2$

Horizontal Asymptote(s): $y=1$

X-int: $(5, 0)$

Y-int: $(0, \frac{5}{2})$ Domain: $\mathbb{R}; x \neq -3, 2$



$$4) g(x) = \frac{(x+2)}{x^2}$$

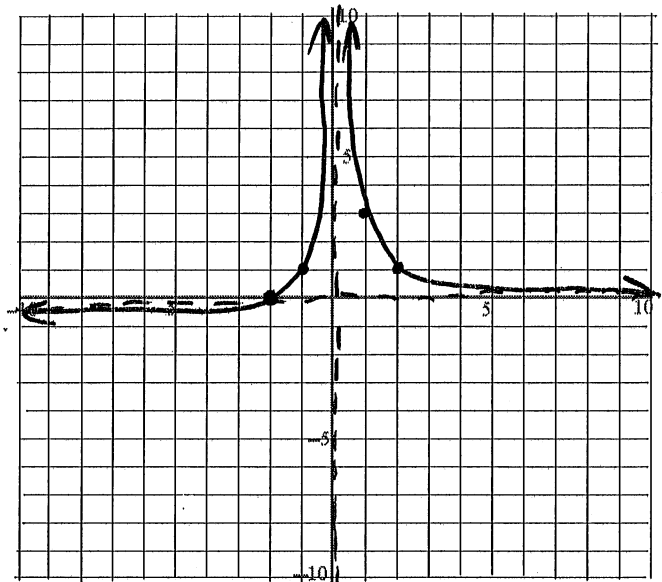
Hole(s): none

Vertical Asymptote(s): $x=0$

Horizontal Asymptote(s): $y=0$

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

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



$$5) f(x) = \frac{6(x+1)}{(x+1)(x-5)(x+3)} = \frac{6}{(x-5)(x+3)}$$

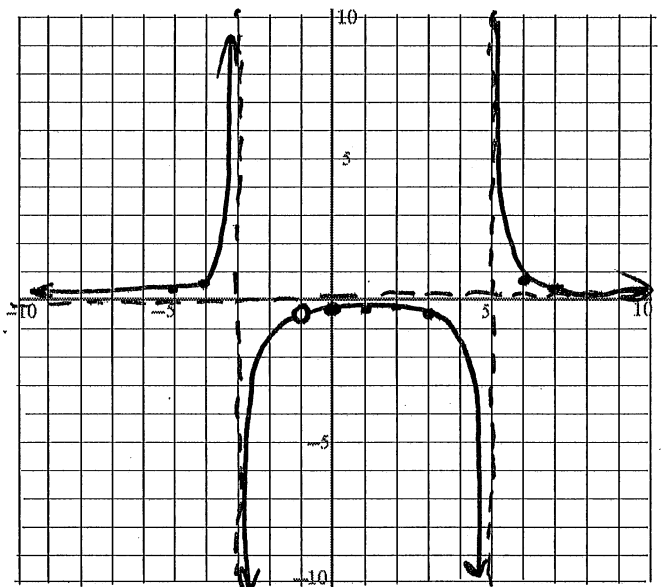
Hole(s): $(-1, \frac{1}{2})$

Vertical Asymptote(s): $x=5, x=-3$

Horizontal Asymptote(s): $y=0$

X-int: none

Y-int: $(0, -\frac{2}{5})$ Domain: $\mathbb{R}; x \neq 5, -3$



$$6) h(x) = \frac{5x^2+7x+2}{2x^2+5x-12} = \frac{(5x+2)(x+1)}{(2x-3)(x+4)}$$

Hole(s): none

Vertical Asymptote(s): $x = \frac{3}{2}, x = -4$

Horizontal Asymptote(s): $y = \frac{5}{2}$

X-int: $(-\frac{2}{5}, 0), (-1, 0)$

Y-int: $(0, -\frac{1}{6})$ Domain: $\mathbb{R}; x \neq \frac{3}{2}, -4$

