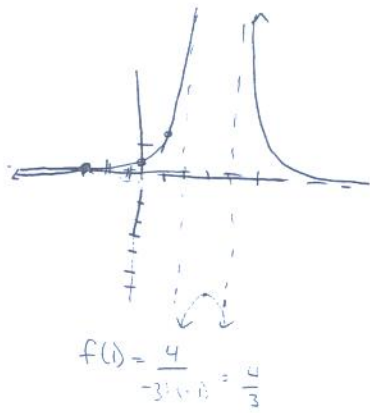


$$① f(x) = \frac{x+3}{x^2-6x+8}$$

$$f(x) = \frac{x+3}{(x-4)(x-2)}$$

VA:  $x=4$   $x=2$   
 HA:  $y=0$   
 Zeros:  $-3$   
 yint:  $(0, 3/8)$   
 D:  $\mathbb{R} \neq 4, 2$   
 R:  $(-\infty, -5.958) \cup (-.0420, \infty)$



$$f(1) = \frac{4}{-3 \cdot 1 \cdot 2} = -\frac{2}{3}$$

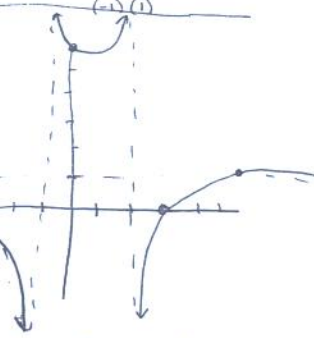
$$f(5) = \frac{+}{++}$$

$$f(3) = \frac{6}{(-1) \cdot 1}$$

$$② g(x) = \frac{x^2+x-12}{x^2-x-2}$$

$$g(x) = \frac{(x+4)(x-3)}{(x-2)(x+1)}$$

VA:  $x=2$   $x=-1$   
 HA:  $y=1$   
 Zeros:  $-4, 3$   
 yint:  $(0, 6)$   
 D:  $\mathbb{R} \neq 2, -1$   
 R:  $(-\infty, 1.114) \cup (4.886, \infty)$

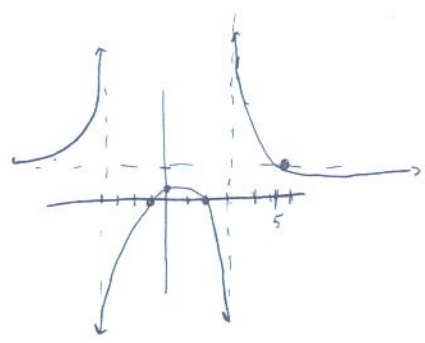


Cross?  $1 = \frac{x^2+x-12}{x^2-x-2}$   
 $x^2-x-2 = x^2+x-12$   
 $-x-2 = x-12$   
 $-2 = 2x-12$   
 $10 = 2x$   
 $5 = x$   
 yes @  $x=5$

$$③ h(x) = \frac{x^2-x-2}{x^2+x-12}$$

$$h(x) = \frac{(x-2)(x+1)}{(x+4)(x-3)}$$

VA:  $x=-4$   $x=3$   
 HA:  $y=1$   
 Zeros:  $2, -1$   
 yint:  $(0, 1/6)$   
 D:  $\mathbb{R} \neq -4, 3$   
 R:  $(-\infty, 2.05) \cup (.897, \infty)$



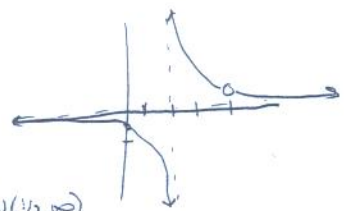
Cross?  $1 = \frac{x^2-x-2}{x^2+x-12}$   
 $x^2+x-12 = x^2-x-2$   
 $2x = 10$   
 $x = 5$   
 Yes @  $x=5$

$$④ j(x) = \frac{x-4}{x^2-6x+8}$$

$$j(x) = \frac{x-4}{(x-4)(x-2)} = \frac{1}{x-2} \quad x \neq 4$$

hole @  $(4, 1/2)$

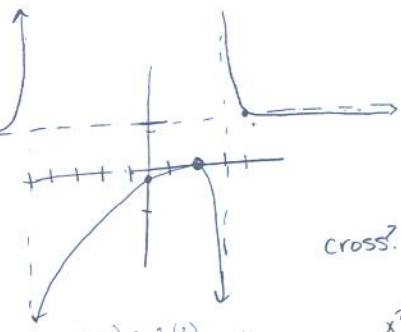
VA:  $x=2$   
 HA:  $y=0$   
 Zeros: None  
 yint:  $(0, 1/2)$   
 D:  $\mathbb{R} \neq 2, 4$   
 R:  $(-\infty, 0) \cup (0, 1/2) \cup (1/2, \infty)$



$$⑤ k(x) = \frac{x^2-4x+4}{x^2+2x-15}$$

$$k(x) = \frac{(x-2)(x-2)}{(x+5)(x-3)}$$

VA:  $x=5, x=-3$   
 HA:  $y=1$   
 Zeros:  $2$   
 yint:  $(0, 4/15)$   
 D:  $\mathbb{R} \neq -5, 3$   
 R:  $(-\infty, 0) \cup (4/38, \infty)$

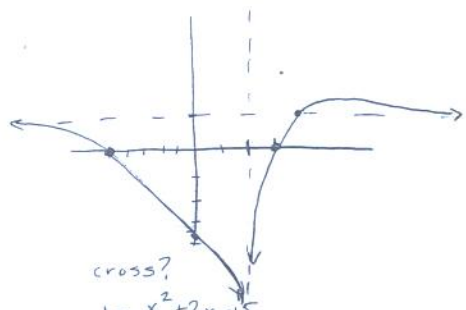


Cross?  $1 = \frac{x^2-4x+4}{x^2+2x-15}$   
 $x^2+2x-15 = x^2-4x+4$   
 $6x = 19$   
 $x = 19/6$   
 $3 \frac{1}{6}$

$$⑥ l(x) = \frac{x^2+2x-15}{x^2-4x+4}$$

$$l(x) = \frac{(x+5)(x-3)}{(x-2)(x-2)}$$

VA:  $x=2$   
 HA:  $y=1$   
 Zeros:  $-5, 3$   
 yint:  $(0, -15/4)$   
 $(0, -3 \frac{3}{4})$   
 D:  $\mathbb{R} \neq 2$   
 R:  $(-\infty, 2.286)$



Cross?  $1 = \frac{x^2+2x-15}{x^2-4x+4}$   
 $x^2-4x+4 = x^2+2x-15$   
 $-6x = -19$   
 $x = 19/6$