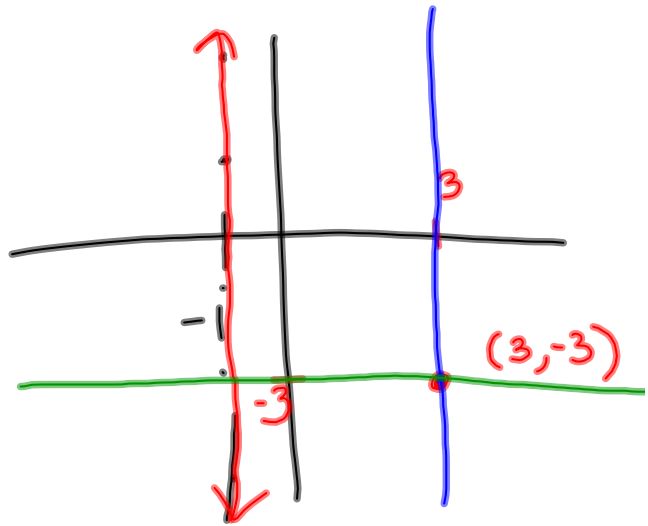


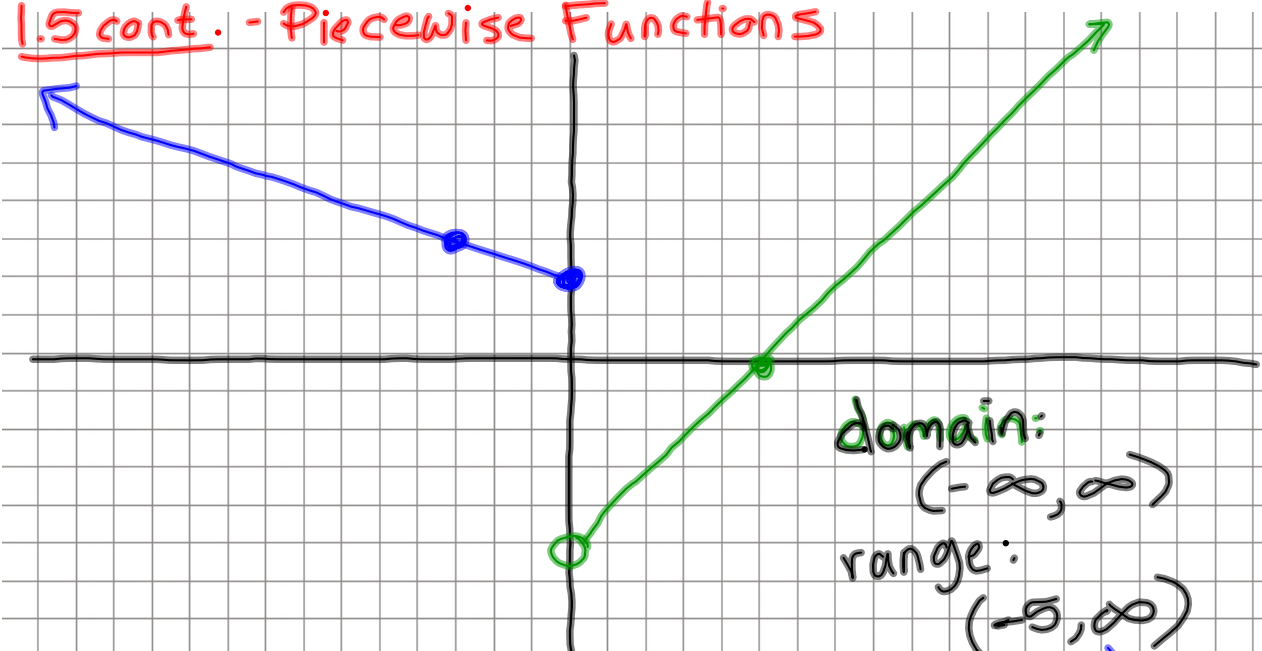
1.4
 63. $(3, -3); X = -1$

$|| : X = 3$

$L : y = -3$



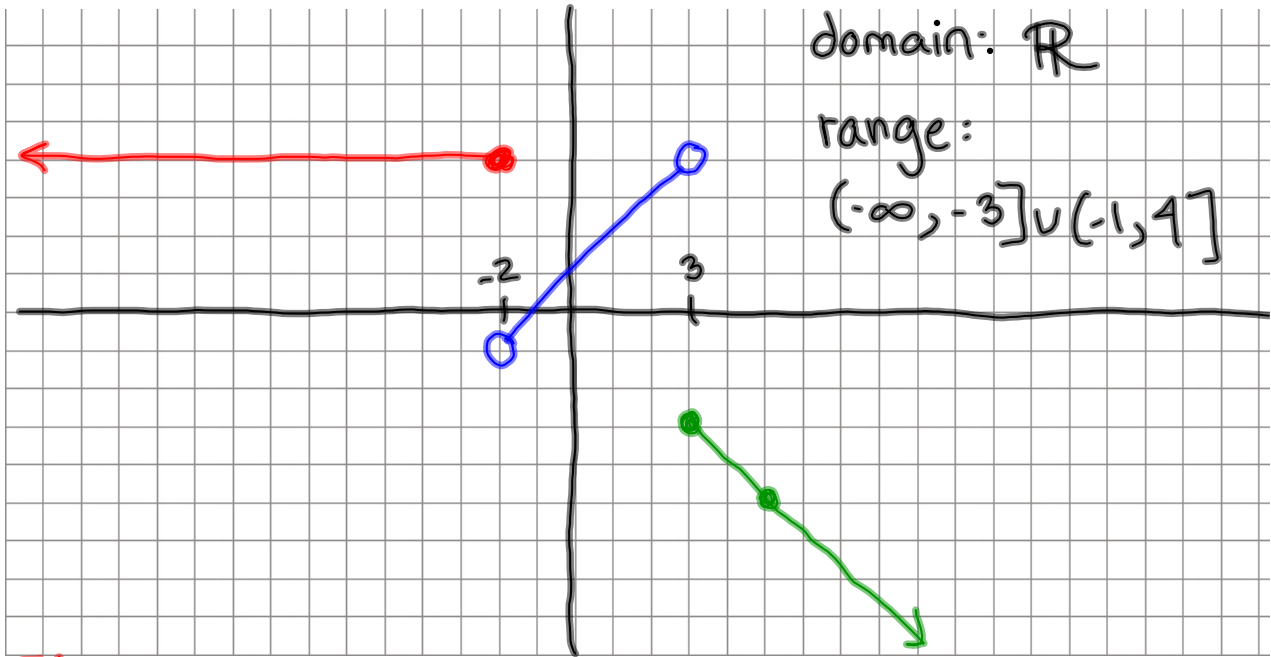
1.5 cont. - Piecewise Functions



domain:
 $(-\infty, \infty)$
 range:
 $(-5, \infty)$

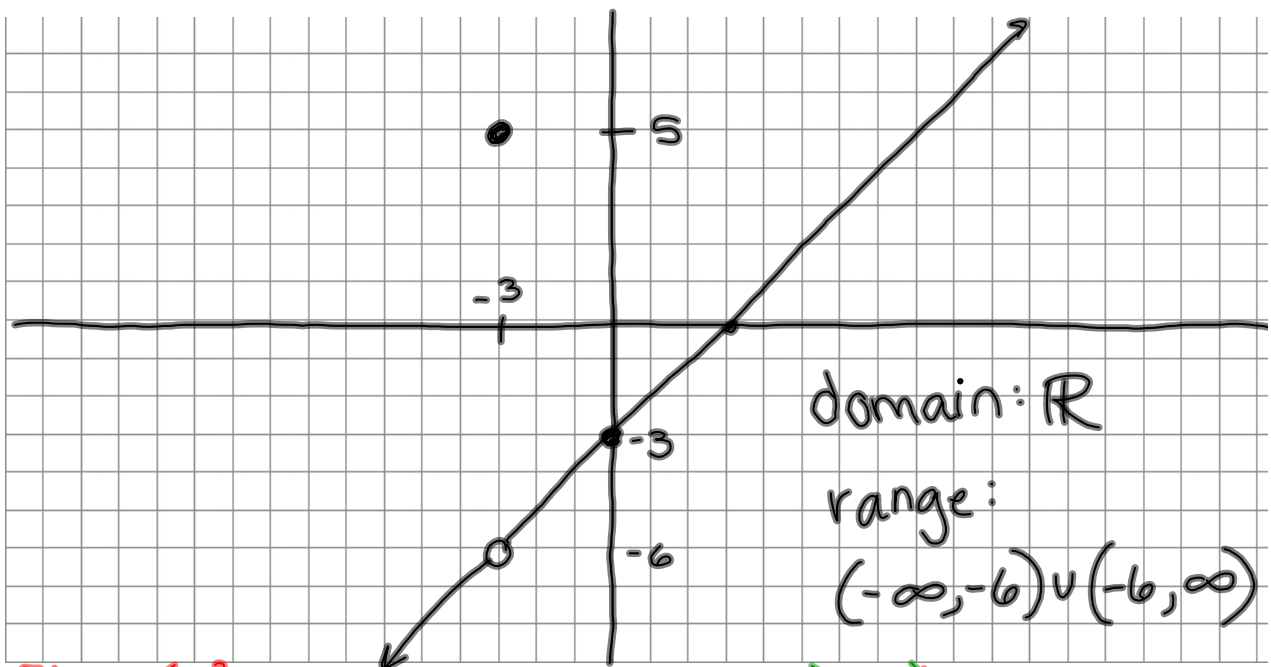
52. $f(x) = \begin{cases} -\frac{1}{3}x + 2, & x \leq 0 \\ x - 5, & x > 0 \end{cases}$

$-\frac{1}{3}(0) + 2 = 2; \frac{1}{3}(-3) + 2 = 3$
 $(0, 2) \quad (-3, 3)$
 $0 - 5 = -5 \quad 5 - 5 = 0$
 $(0, -5) \quad (5, 0)$



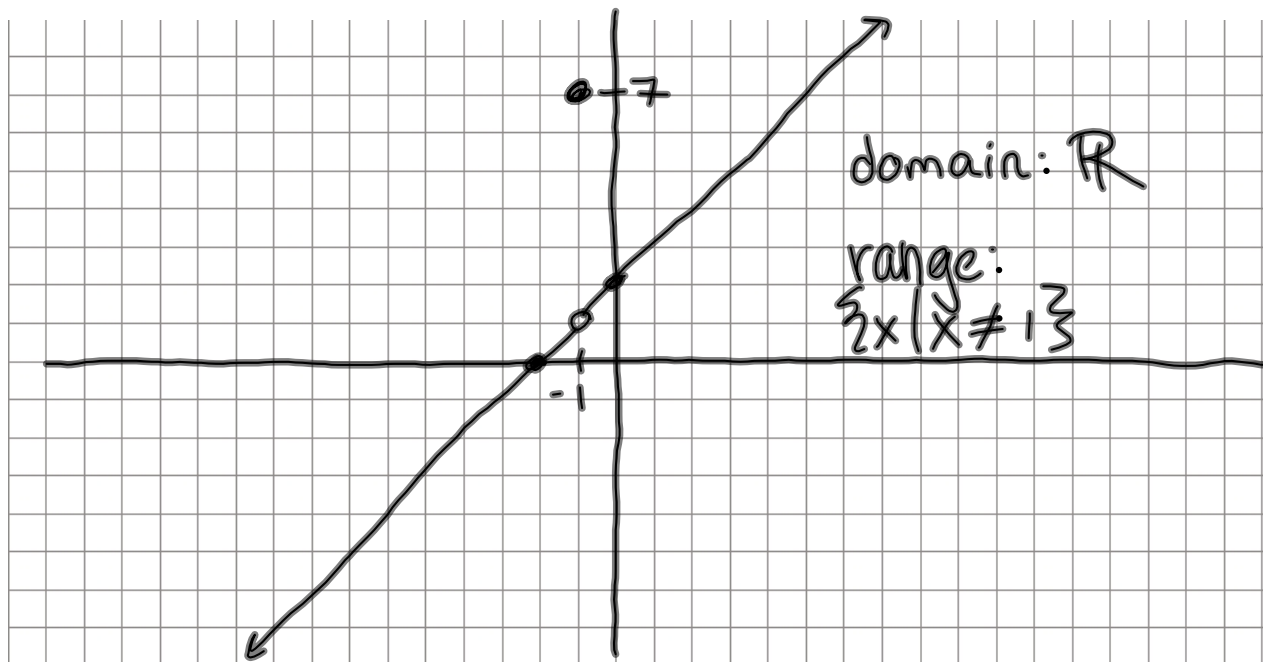
54. $f(x) = \begin{cases} 4, & x \leq -2 \\ x+1, & -2 < x < 3 \\ -x, & x \geq 3 \end{cases}$

$-2+1 = -1$ $3+1 = 4$
 $(-2, -1)$ $(3, 4)$
 -3 $(3, -3)$ -5 $(5, -5)$

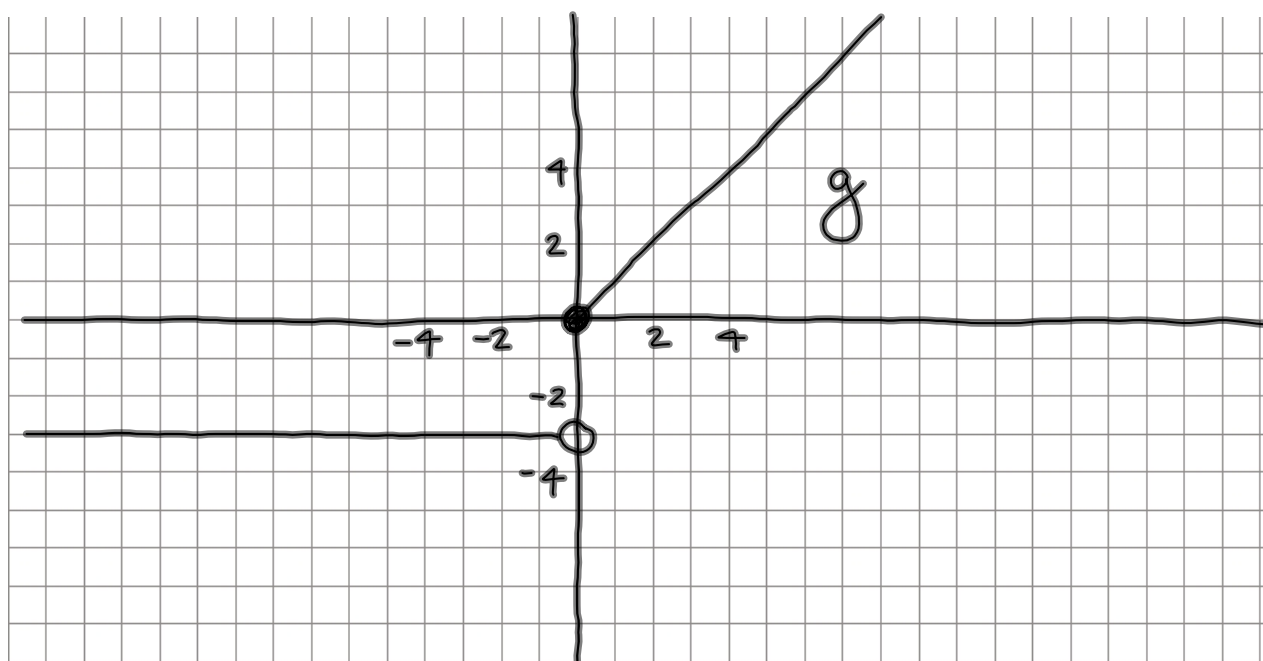


56. $f(x) = \begin{cases} \frac{x^2-9}{x+3}, & x \neq -3 \\ 5, & x = -3 \end{cases}$

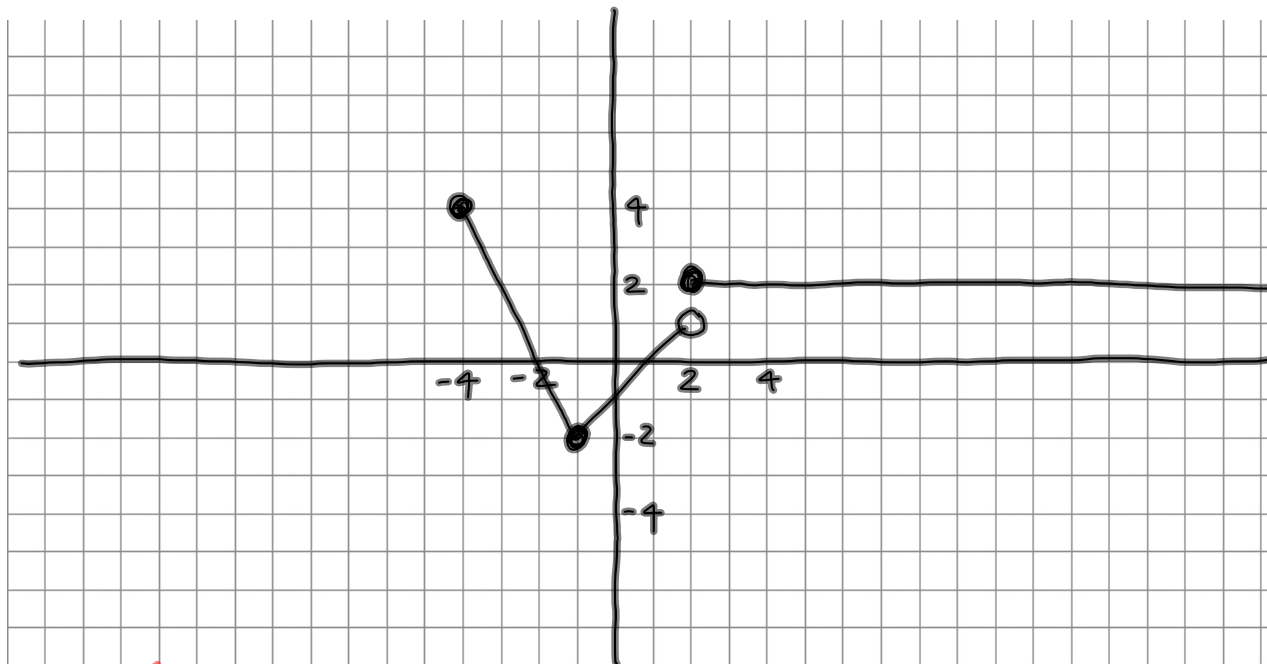
$= \begin{cases} \frac{(x-3)(x+3)}{x+3} = x-3, & x \neq -3 \\ 5, & x = -3 \end{cases}$



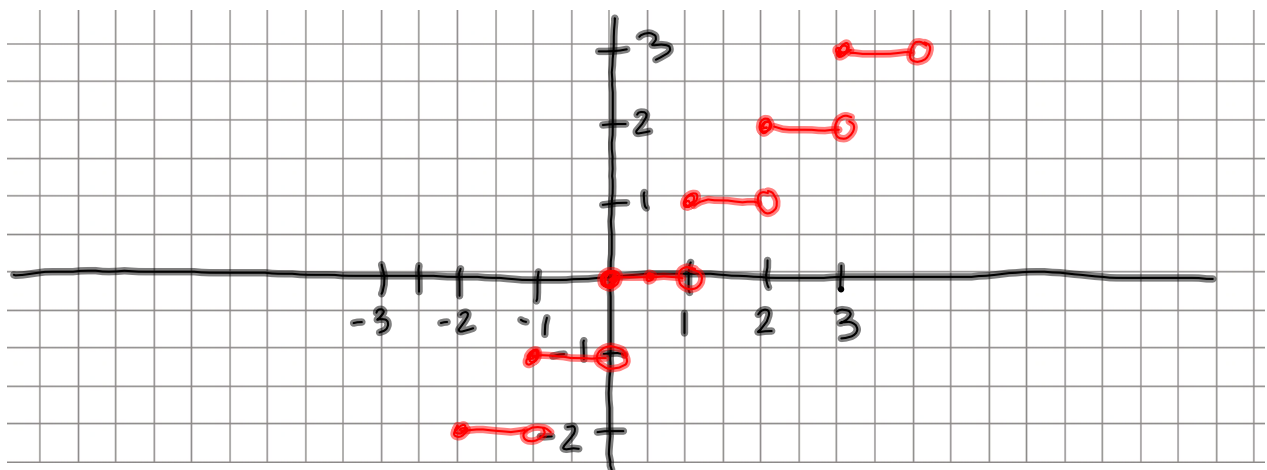
$$58. \quad f(x) = \begin{cases} \frac{x^2+3x+2}{x+1}, & x \neq -1 \\ 7, & x = -1 \end{cases} = \begin{cases} x+2, & x \neq -1 \\ 7, & x = -1 \end{cases}$$



$$70. \quad g(x) = \begin{cases} -3, & x < 0 \\ x, & x \geq 0 \end{cases}$$



$$7A. \begin{cases} -2x-4, & -4 \leq x \leq -1 \\ x-1, & -1 \leq x < 2 \\ 2, & x \geq 2 \end{cases}$$



Greatest Integer Function
 $\lfloor x \rfloor$ = the greatest integer
 less than or equal to x
 "Step Function"

$$\frac{1.5}{51 - 73 \text{ odd}}$$