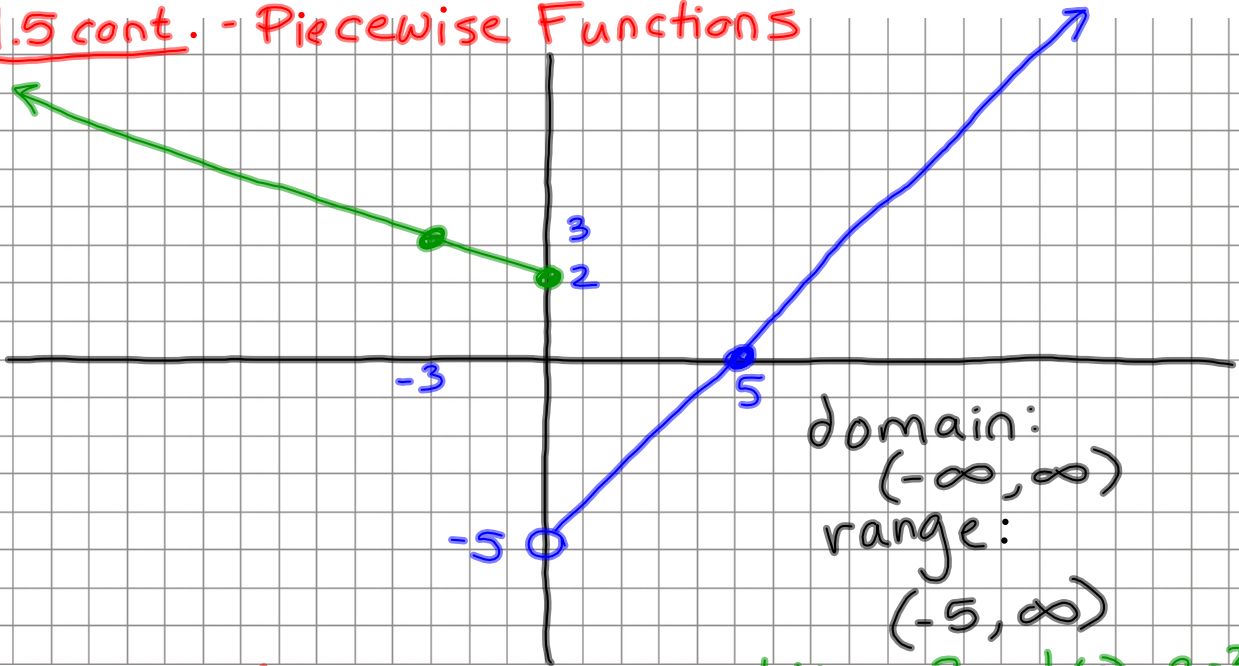


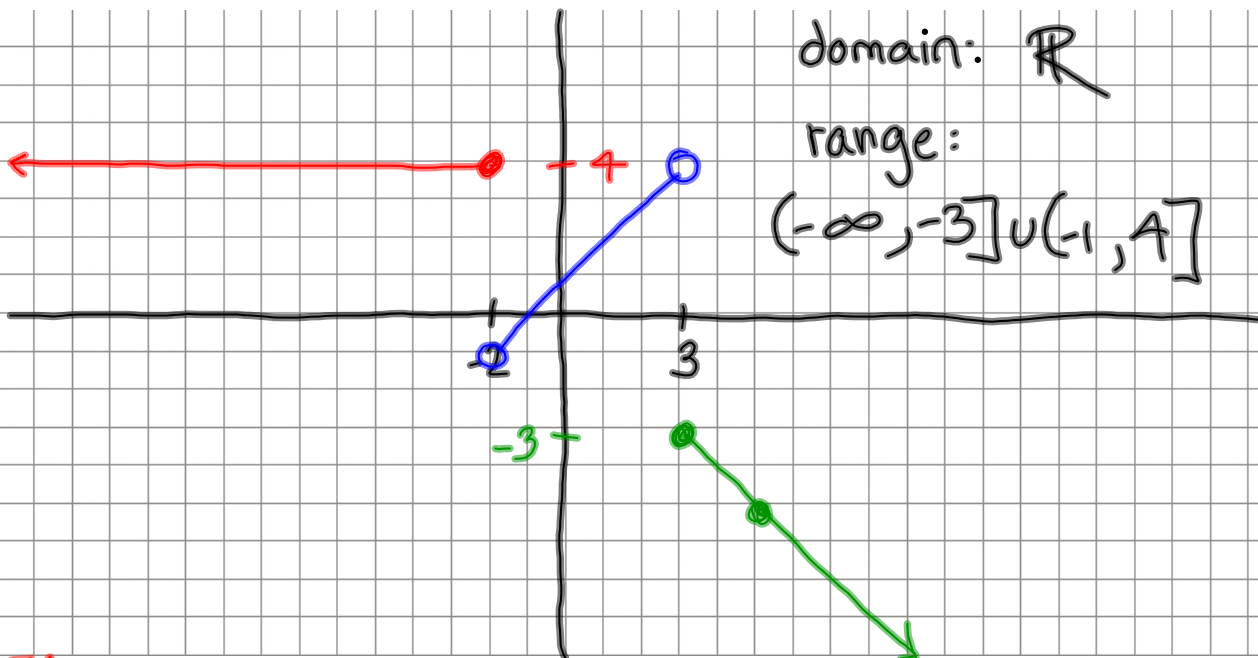
1.5 cont. - Piecewise Functions



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

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

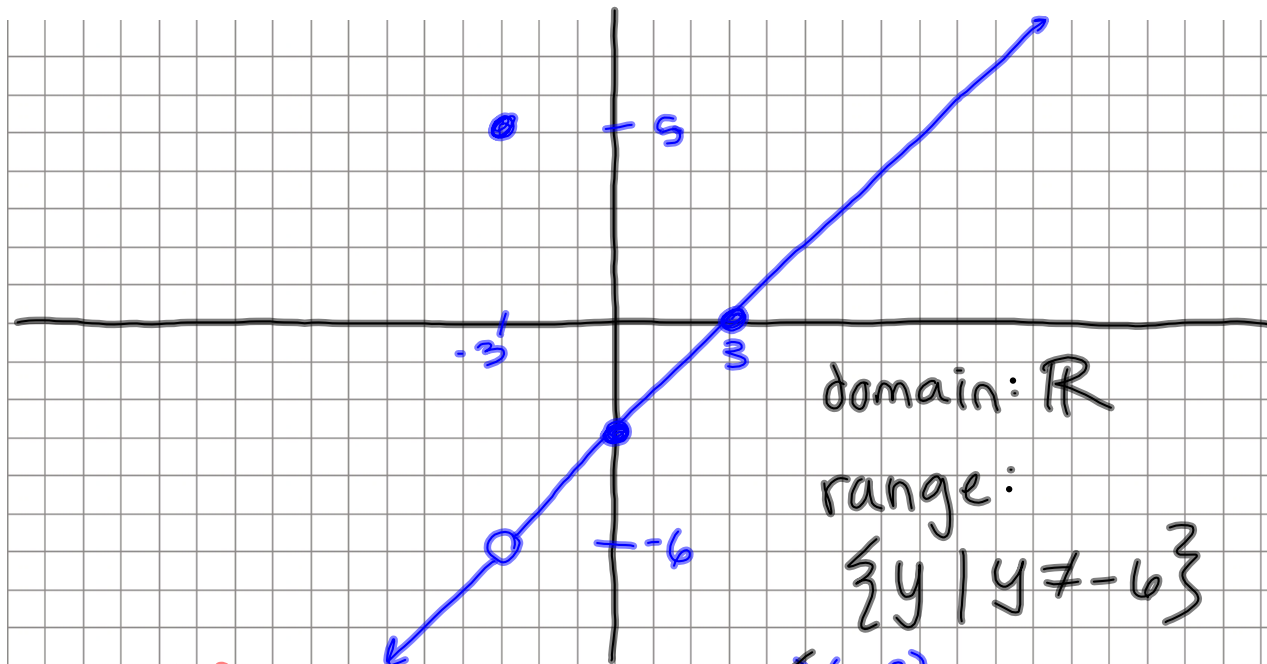
$-\frac{1}{3}(0) + 2 = 2$      $-\frac{1}{3}(-3) + 2 = 3$   
 $(0, 2)$      $(-3, 3)$   
 $0 - 5 = -5$      $5 - 5 = 0$   
 $(0, -5)$      $(5, 0)$



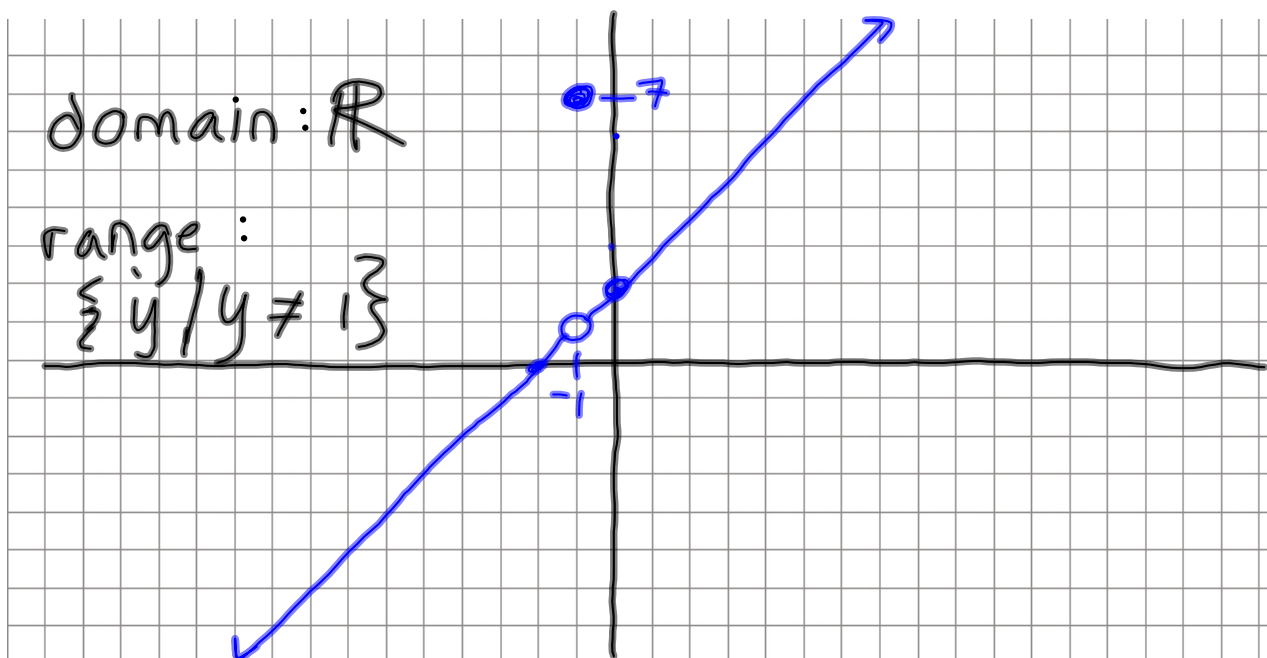
domain:  $\mathbb{R}$   
 range:  
 $(-\infty, -3] \cup (-1, 4]$

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

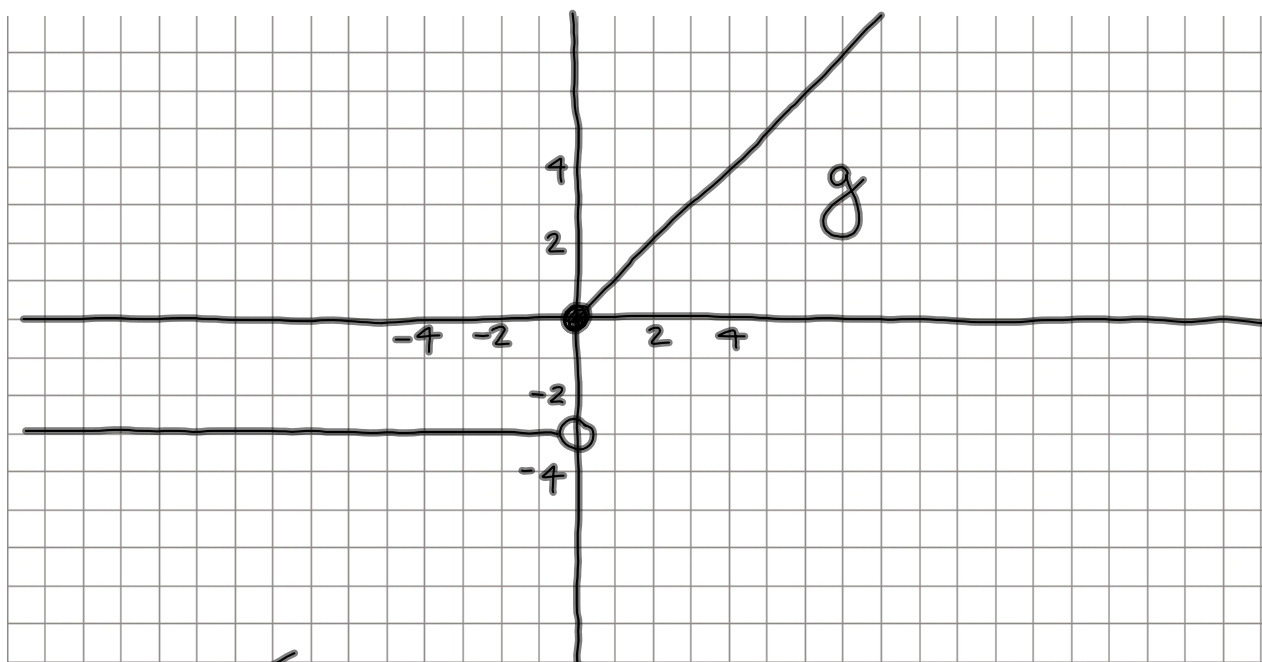
$-2 + 1 = -1$      $3 + 1 = 4$   
 $(-2, -1)$      $(3, 4)$   
 $-3$      $(3, 3)$      $(5, 5)$



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

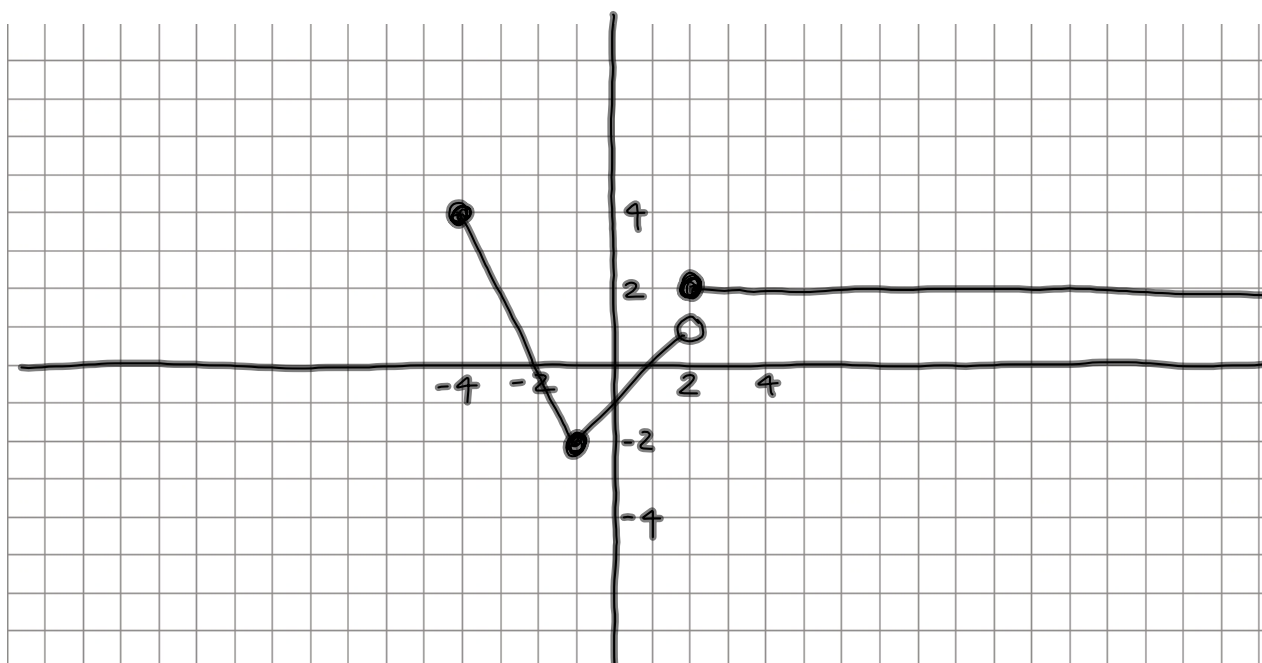


$$58. f(x) = \begin{cases} \frac{x^2+3x+2}{x+1}, & x \neq -1 \\ 7, & x = -1 \end{cases} = \begin{cases} x+2, & x \neq -1 \\ 7, & x = -1 \end{cases}$$



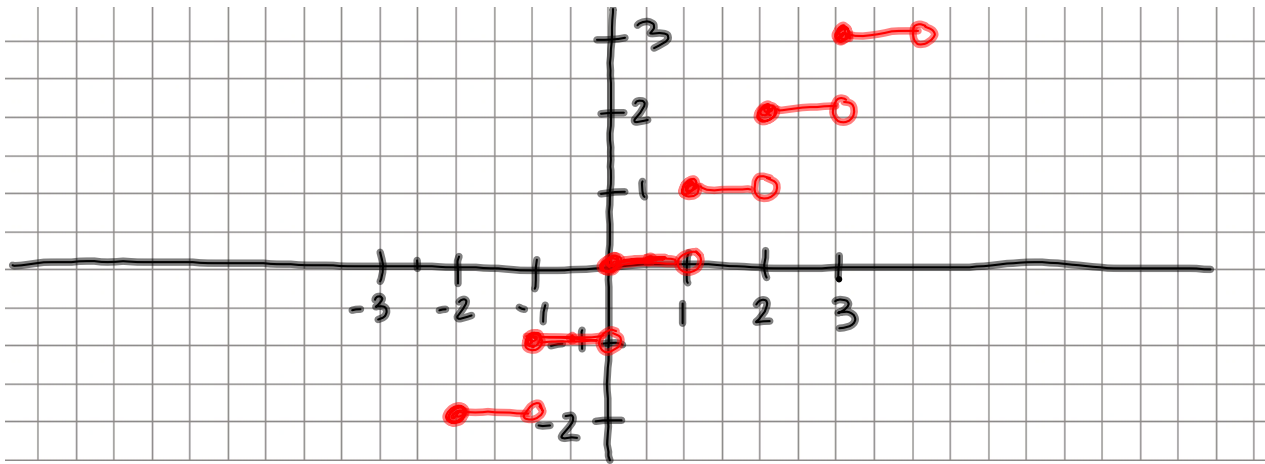
70.

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



71.

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



## Greatest Integer Function

$\lfloor x \rfloor$  = greatest integer less than or equal to  $x$ .

$y = \lfloor x \rfloor$  "Step Function"

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

51 - 73 odd