

1.2

53  $g(x) = \frac{1}{x-1}$

$$f(x) = 1 + \frac{1}{x}$$

$$f(g(x)) = x$$

$$x = 1 + \frac{1}{y}$$

$$x - 1 = \frac{1}{y}$$

$$y = \frac{1}{x-1}$$

$$f(g(x)) = 1 + \frac{1}{\frac{1}{x-1}} = x$$

$$1 + x - 1 = x$$

$$x = x$$

1.2

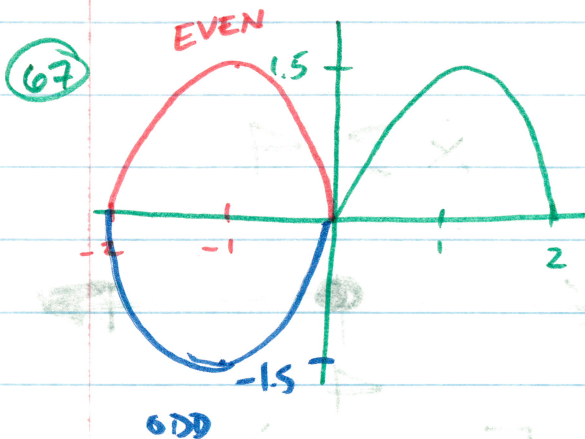
$$42) f(x) = \begin{cases} 2, & 0 \leq x < 1 \\ 0, & 1 \leq x < 2 \\ 2, & 2 \leq x < 3 \\ 0, & 3 \leq x \leq 4 \end{cases}$$

$$41) f(x) = \begin{cases} x, & 0 \leq x \leq 1 \\ -x+2, & 1 < x \leq 2 \end{cases}$$

$\downarrow$   
 $(1,1), (2,0)$   
 $m = \frac{0-1}{2-1} = -1$   
 $y - 0 = -1(x-2)$   
 $y = -x + 2$

$\downarrow$   
 $(0,0), (1,1)$   
 $m = \frac{1-0}{1-0} = 1$

$y = x$   
 $y = |x + 0$   
 $y - 1 = 1(x - 1)$   
 $y - 1 = x - 1$   
 $+1 \quad +1$   
 $y = x$



$$45) f(x) = \begin{cases} -x, & -1 \leq x < 0 \\ 1, & 0 \leq x \leq 1 \\ -\frac{1}{2}x + \frac{3}{2}, & 1 < x < 3 \end{cases}$$

$\downarrow$   
 $(-1,1), (0,0)$   
 $m = \frac{0-1}{0-(-1)} = -1$

$y = -x$   


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 $(3,0), (1,1)$   
 $m = \frac{0-1}{3-1} = -\frac{1}{2}$   
 $y - 0 = -\frac{1}{2}(x - 1)$   
 $y - 1 = -\frac{1}{2}x + \frac{1}{2}$   
 $+1 \quad +1$