pg. 61-63

*5, 13, 14, 23, 31-39 odd, 57, 59, 61-66 all, 82

5. $f+g = x^2+10x$

$f-g = x^2-8x$

$f \cdot g = 9x^3+9x^2$

$\frac{f}{g} = \frac{x^2+x}{9x} = \frac{x(x+1)}{9x} = \frac{x+1}{9}$

13a. $f+g = 40x+550$ domain: $[1, 4]$

b. total cost of rent, gas, groceries, etc. na week

c. $(f+g)(4) = 40(4)+550 = 710$. cost of 1 month.

23. $\frac{\sqrt{(x^2-4)+4}}{\sqrt{x^2}} = x$

14. a. $(w_p - w_f)(d) = F_p d - F_f d$

$= d(F_p - F_f)$

b. $95(50) - 55(50) = 2000$ joules

31. $f(x) = 6x-8$

$g(x) = \frac{1}{x+5}$

57. a. $g(x) = x^2+4$

b. $\frac{x+2}{?} = \frac{1}{4}$ $? = 4x+8$

33. $f(x) = [x]$

$g(x) = -3(x-9)$

59. a. $g(x) = 4x$

b. $\frac{1}{32}x^{\frac{1}{3}}$

35. $f(x) = x^3$

$g(x) = \sqrt{x}+4$

61. $f(2) = 2$, $g(2) = -1$ $2+-1 = (1)$

62. $f(-6) = 4$, $g(-6) = -5$ $-6--5 = (-1)$

63. $f(4) = 0$, $g(4) = 0$ $0 \cdot 0 = (0)$

37. $f(x) = \frac{8}{x^2}$

$g(x) = x-5$

65. $g(-4) = 0$, $f(0) = (0)$

64. $f(-2) = -4$, $g(-2) = -3$ $\frac{-4}{-3} = (\frac{4}{3})$

66. $f(6) = -2$, $g(-3) = (-3)$

39. $f(x) = \frac{x+6}{\sqrt{x}}$

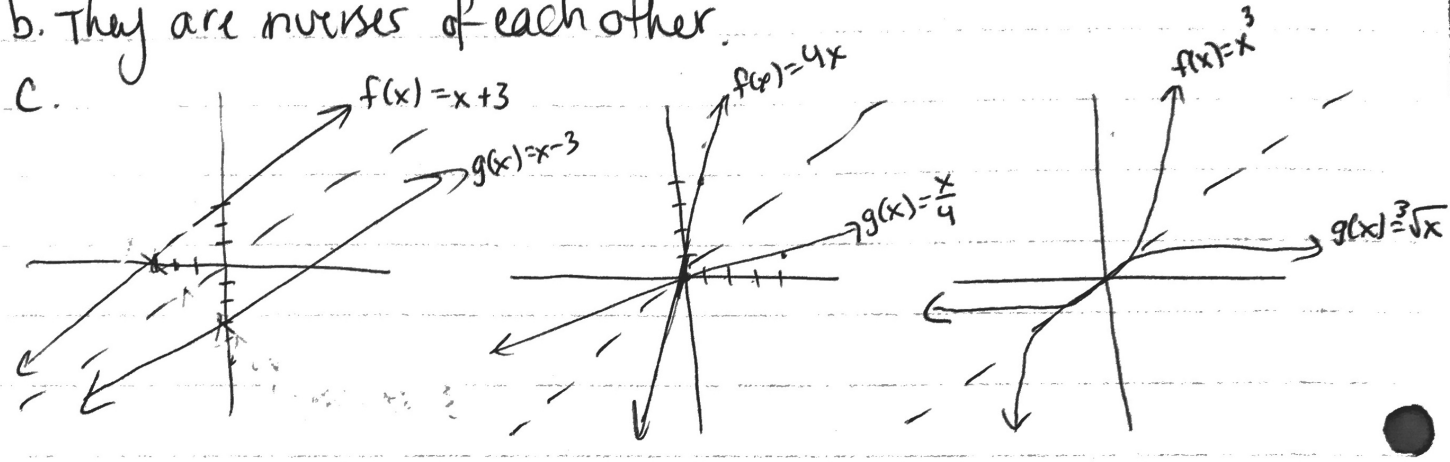
$g(x) = x-1$

82. a.

$f(x)$	$g(x)$	$(f\circ g)(x)$	$(g\circ f)(x)$
$x+3$	$x-3$	$(x-3)+3=x$	$(x+3)-3=x$
$4x$	$\frac{x}{4}$	$4(\frac{x}{4})=x$	$\frac{(4x)}{4}=x$
x^3	$\sqrt[3]{x}$	$(\sqrt[3]{x})^3=x$	$\sqrt[3]{(x^3)}=x$

b. They are inverses of each other.

c.



d. The line of reflection is $y=x$

e. $[f\circ g](x)=x$ $[g\circ f](x)=x$ $(y=x)$

f. i. $g(x)=x+6$

ii. $g(x)=3x$

iii. $g(x)=\sqrt[3]{x}$

iv. $g(x)=\frac{x+3}{2}$

v. $g(x)=\sqrt[3]{x-1}$