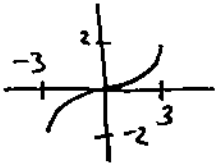


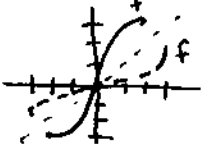
ch 5 Rev

2) f has domain $[-3, 3]$
Range $[-2, 2]$



f^{-1} has domain $[-2, 2]$
range $[-3, 3]$

To draw, rotate f around line $y=x$



4) $f(x) = -2x^2 - 9, x \leq 0$

Find f^{-1} : $y = -2x^2 + 9$

Solve $y - 9 = -2x^2$
 $\frac{y-9}{-2} = x^2$

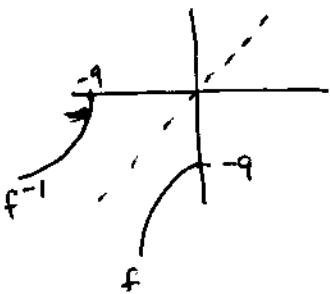
$x = \pm \sqrt{\frac{y-9}{-2}}$

Since $x \leq 0$,

switch

$f(x) = y = -\sqrt{\frac{y-9}{-2}}$

$f^{-1} = -\sqrt{\frac{-x+9}{2}}$



6) f, g 1-1

$f(2) = 7, f(4) = 2$

$g(2) = 5,$

(a) $g(f^{-1}(7)) = g(2) = \boxed{5}$

side $f^{-1}(7) = ?$

means $f(?) = 7, ? = 2$ End Side

6b) $(f \circ g^{-1})(5) = f(g^{-1}(5))$

side $g^{-1}(5) = ?$ means $g(?) = 5$
so $? = 2$ End side

$= f(g^{-1}(5)) = f(2) = \boxed{7}$

c) $(f^{-1} \circ g^{-1})(5) = f^{-1}(g^{-1}(5)) = f^{-1}(2) = \boxed{4}$

side $g^{-1}(5) = ?$ means $g(?) = 5 \Rightarrow ? = 2$

$f^{-1}(2) = ?$ means $f(?) = 2 \Rightarrow ? = 4$
End side

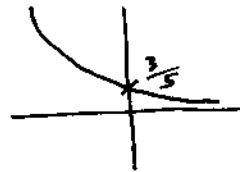
d) $(g^{-1} \circ f^{-1})(2) = g^{-1}(f^{-1}(2)) = g^{-1}(4)$ not enough info to answer.

side $f^{-1}(2) = ?$ means $f(?) = 2 \Rightarrow ? = 4$

$g^{-1}(4) = ?$ means $g(?) = 4 \Rightarrow$ not enough info
End side

8) $f(x) = \left(\frac{3}{5}\right)^x$

$0 \leq \frac{3}{5} \leq 1$ so



26) $8^{2x} \cdot \left(\frac{1}{4}\right)^{x-2} = 4^{-x} \cdot \left(\frac{1}{2}\right)^{2-x}$

$(2^3)^{2x} (2^{-2})^{x-2} = (2^2)^{-x} \cdot (2^{-1})^{2-x}$

$2^{6x} \cdot 2^{-2x+4} = 2^{-2x} \cdot 2^{x-2}$

$2^{6x-2x+4} = 2^{-2x+x-2}$

$2^{4x+4} = 2^{-x-2}$

So $\frac{4x+4}{+x-4} = \frac{-x-2}{+x-4}$

$5x = -6$

$x = \boxed{-\frac{6}{5}}$