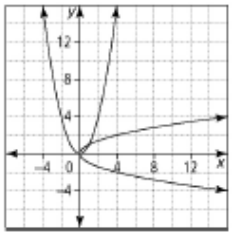
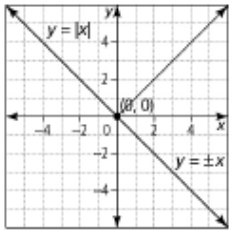
BLM 1–5 Section 1.4 Extra Practice

1. a) interchange the x-coordinate and y-coordinate of the graph or equation
b) $y = f^{-1}(x)$ or $x = f(y)$
c) $(x, y) \rightarrow (y, x)$

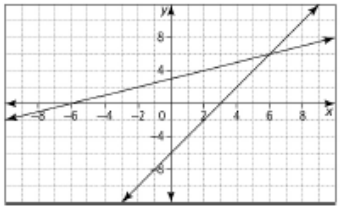
2. a)



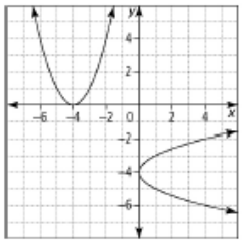
b)



c)



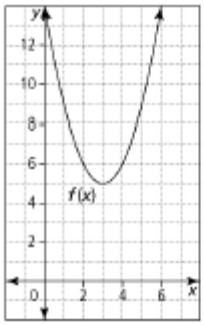
d)



3. a) The inverse of a), b), and d) are not functions. A vertical line intersects the graph of the inverse at more than one point. This means that the relation is not a function.

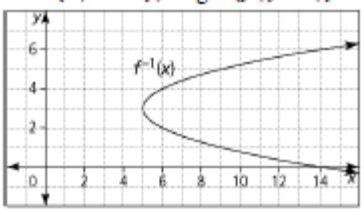
4. a) $f^{-1}(x) = \frac{1}{3}x + 2$ b) $f^{-1}(x) = 2x - 10$
c) $f^{-1}(x) = 3x - 12$ d) $f^{-1}(x) = \frac{1}{2}x - \frac{3}{2}$

5. a)



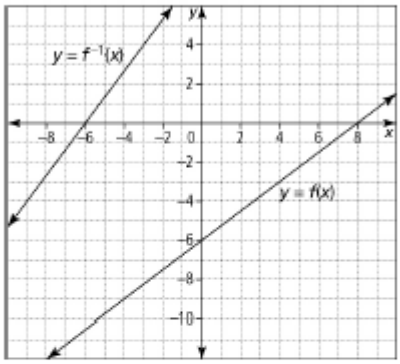
domain: $\{x \mid x \in R\}$; range: $\{y \mid y \geq 5, y \in R\}$

b)



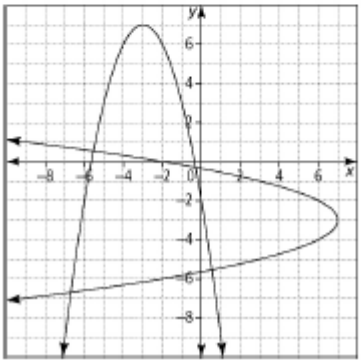
domain: $\{x \mid x \geq 5, x \in R\}$; range: $\{y \mid y \in R\}$
c) Restrict the domain to $\{x \mid x \geq 3, x \in R\}$ or $\{x \mid x \leq 3, x \in R\}$.

6. a) $f^{-1}(x) = \pm\sqrt{x} - 4$ b) $f^{-1}(x) = \pm\sqrt{x+7}$
c) $f^{-1}(x) = \pm\sqrt{x-5} + 2$ d) $f^{-1}(x) = \pm\sqrt{x+9} + 5$
7. a) $x \geq 0$ or $x \leq 0$ b) $x \geq -4$ or $x \leq -4$
c) $x \geq 3$ or $x \leq 3$ d) $x \geq 0$ or $x \leq 0$
8. a) 12 b) 6 c) 16 d) 8
9. a)



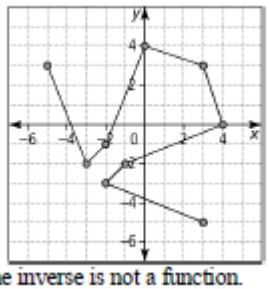
The inverse is a function.

b)



The inverse is not a function.

c)



The inverse is not a function.