Intermediate Algebra Skill

<u>Finding the Inverse of a Quadratic Function with Restricted Domain</u>

Find the inverse of the given function:

1) $f(x)=x^2-3;\ (x\le 0)$

2) $f(x)=x^2+5;\ \ (x\ge 0)$

3) $f(x)=x^2+1;\ \ (x\le 0)$

4) $g(x)=1-x^2;\ \ (x\ge 0)$

5) $g(x)=x^2;\ \ (x\ge 0)$

6) $g(x)=x^2;\ \ (x\le 0)$

7) $h(x)=4-x^2;\ \ (x\le 0)$

8) $h(x)=\left(x+1\right)^2;\ \ (x\le -1)$

9) $h(x)=\left(x-1\right)^2;\ \ (x\ge 1)$

10) $f(x)=\left(x+3\right)^2;\ \ (x\le -3)$

Answers to Finding the Inverse of a Quadratic Function with Restricted Domain

1) $f^{-1}(x) = -\sqrt{x+3} \quad (x \geq -3)$

2) $f^{-1}(x) = \sqrt{x-5} \quad (x \geq 5)$

3) $f^{-1}(x) = -\sqrt{x-1} \quad (x \geq 1)$

4) $g^{-1}(x) = \sqrt{1-x} \quad (x \leq 1)$

5) $g^{-1}(x) = \sqrt{x} \quad (x \geq 0)$

6) $g^{-1}(x) = -\sqrt{x} \quad (x \geq 0)$

7) $h^{-1}(x) = \sqrt{4-x} \quad (x \leq 4)$

8) $h^{-1}(x) = \sqrt{x} - 1 \quad (x \geq 0)$

9) $h^{-1}(x) = \sqrt{x} + 1 \quad (x \geq 0)$

10) $f^{-1}(x) = \sqrt{x} - 3 \quad (x \geq 0)$