Solving Quadratic Equations by Taking Square Roots

Quick Review	
When looking for the *square root* of a number *n*, you are finding a number such that the product of the number times itself gives you *n*. **Note:** You cannot take the square root of a negative number.	Example: Let $n = 4$ $\sqrt{n} = \sqrt{4} = \pm 2$ because $2 \cdot 2 = 4$ and $(-2) \cdot (-2) = 4$
A *quadratic equation* that can be solved using square roots is an equation that can be written in the form $ax^2 + c = 0$.	Example: 1) $x^2 - 9 = 0$ 2) $3y^2 + 5 = 53$
To *solve a quadratic equation by taking square roots,* isolate the squared term first, then take the square root of both sides of the equation to solve.	Example: 1) $x^2 - 9 = 0$ $x^2 = 9$ (add 9 to both sides) $\sqrt{x^2} = \sqrt{9}$; x = 3 and x = -3 2) $3y^2 + 5 = 53$ $3y^2 = 48$ (subtract 5) $y^2 = 16$ (divide by 3) y = 4 and y = -4

Problems

Solve each of the following quadratic equations by taking square roots.

1. $x^2 - 25 = 0$
2. $2x^2 - 50 = 0$
3. $y^2 + 7 = 16$
4. $4y^2 - 5 = 139$
5. $z^2 + 7 = 3$
6. $8 - 2y^2 = 0$