Common Algebra Mistakes
Example: Solving a Quadratic Equation

The Goal

Find all real number solutions for the following equation:

$$x^2 + 1 = 0$$

The Mistake

Find the algebra mistake:

$$x^2 + 1 = 0 \implies x = \pm 1$$

Need a hint? Look carefully at the red part of the algebra:

$$x^2 + 1 = 0 \implies x = \pm 1$$

The Correction

$$x^2 + 1 = 0 \implies x^2 = -1, \text{ which has no real solutions}$$

An Explanation

Don't jump to conclusions. Show the intermediate step (see "The Correction") - it is almost impossible to make the mistake shown above if you do that.
(If we allow complex number solutions, then the solutions are x = ± i, where i is a square root of -1)