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# Common Algebra Mistakes

## Example: Solving a Linear Equation

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### The Goal

Solve the following equation for b:

$$e^2 = \frac{1}{e^2} + b$$

### The Mistake

Find the algebra mistake:

$$e^2 = \frac{1}{e^2} + b \implies e^4 = b$$

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

$$e^2 = \frac{1}{e^2} + b \implies e^4 = b$$

### The Correction

$$e^2 = \frac{1}{e^2} + b \implies e^2 - \frac{1}{e^2} = b$$

### An Explanation

*Subtract*  $1/e^2$  from both sides to isolate b.