

Common Algebra Errors

Fill in examples to show that the statements in the left column are false.

Make sure that you don't make these mistakes!

Error	Example	Correct Statement
$(x + y)^2 = x^2 + y^2$	$(2 + 3)^2 = 25 \neq 13 = 2^2 + 3^2$	$(x + y)^2 = x^2 + 2xy + y^2$
$\sqrt{x^2 + y^2} = x + y$		
$\sqrt{x^2} = x$		$\sqrt{x^2} = x $
$\frac{a+b}{a} = b$		$\frac{a+b}{a} = \frac{a}{a} + \frac{b}{a} = 1 + \frac{b}{a}$
$\frac{a+b}{a+c} = \frac{b}{c}$		$\frac{a+b}{a+c} = \frac{a}{a+c} + \frac{b}{a+c}$
$\frac{a}{b} + \frac{c}{d} = \frac{a+c}{b+d}$		$\frac{a}{b} + \frac{c}{d} = \frac{ad+bc}{bd}$
If $x^2 = a$, then $x = \sqrt{a}$.		If $x^2 = a$, then $x = \pm\sqrt{a}$.