

Solving Absolute Value Equations in One Variable

Quick Summary	
The absolute value of A is just A when A is positive but it is $-A$ when A is negative.	$ 5 = 5$ but $ -5 = -(-5)$
This is true for any algebraic expression also.	$ x + 5 = 11$ means $x + 5 = 11$ (if $x + 5$ is positive) and $x + 5 = -11$ (if $x + 5$ is negative) So $x = 6$ or $x = -16$

Example: Solve $|2x - 3| = x$

solution: Either $2x - 3 = x$ (if x is positive)

Problems

Solve each of the following equations for all values of the unknown.

1. $|x| = 231$
2. $|4y| = 2$
3. $|x - 6| = 16$
4. $|5 - 2x| = 41$
5. $|x| = 2x + 6$