

Complex Absolute-Value Equations Bonus

Solve each Absolute-Value Equations for both x's.

1) EXAMPLE: $-3|5 + 9x| + 26.75 = -42.25$

$-26.75 \quad -26.75$

$-3|5 + 9x| = -69$

$/-3 \quad /-3$

$|5 + 9x| = 23$

$5 + 9x = 23 \text{ and } 5 + 9x = -23$

$-5 \quad -5 \quad -5 \quad -5$

$9x = 18 \text{ and } 9x = -28$

$/9 \quad /9 \quad /9 \quad /9$

$x = 2 \quad x = -3.11$

I know I want the **bracket** to be alone.I **subtract** 26.75 from both sides.I **divide** both sides by -3.I now have the **bracket** by itself.I make a **positive and negative** version.I **subtract** 5 from both sides of **both equations**.I **divide** both sides of both by 9.

I get both solutions.

2) $10|x - 4| + 5 = 15$

3) $-9|x + 10| + 1 = -8$

4) $5\left|\frac{x}{2}\right| + 4 = 9$

5) $10|2x - 9| - 14 = 26$

6) $9|10x - 10| = 90$

7) $|x + 9| + 1 = 19$

8) $8|7x + 5| - 2 = 94$

9) $2 - 3|7x + 4| = -91$

10) $10\left|\frac{7x - 2}{3}\right| - 8 = 42$

11) $1.25|2x - 1.6| - 5.7 = 7.22$

12) $-7.7|1.8x - 3.8| + 1.5 = -12.36$

13) $8.7|6.4x - 5.6| - 5.1 = 39.27$