

1. By inspection, determine the solutions (there are two) to the following absolute value equations.

a. $|x| = 8$

b. $|x + 2| = 5$

2. Solve the following absolute value equations.

a. $|x - 3| = 13$

c. $|x + 4| = 0$

b. $\left| \frac{2z - 1}{3} \right| = 3$

d. $|2x - 10| + 7 = 7$

3. Check the solutions to the following equation.

$$|x - 4| = |3x - 2| \text{ The solution set is } \{-1, \frac{3}{2}\}$$

4. Solve the following absolute value equations.

a. $|x + 4| = |x - 5|$

c. $|2x + 3| = |x + 5|$

b. $|x - 7| = |x + 6|$

d. $|3x - 1| = |5x + 2|$

5. Solve the following equations.

a. $4 + 10(n - 7) = -72 - (9 - 5n)$

d. $\frac{x + 8}{x + 2} + \frac{9}{x + 8} = 2$

b. $x^2 - 2x = 80$

e. $t = \sqrt{t + 2} + 40$

c. $2y^2 + 8y - 3 = 0$ by completing the square f. $5x^2 = -31x - 44$