

1.5

Date:

Objective:

Steps for Solving with one Variable:

1. Get the variable or the group (parentheses, absolute value, radical) that include the variable by itself.
 - Do add/subtract first
 - Then do the multiply/divide
2. Do inverse operations to get rid of what is being done to the group with the variable.
 - Does it have an **exponent**? ---- **take the root** (the exponent as your index)
 - Does it have a **radical**? ----- raise both sides to an the **exponent** (from your index number)
 - Does it have **absolute value** bars? ----- Separate into **two equations**
3. Finish getting the variable by itself

Examples: Solve for the variable. Leave answers as a simplified fraction. Show work.

1. $2(x - 4)^4 + 8 = 10$

2. $-3x^2 = 12$

3. $|x - 3| = 9$

4. $-4\sqrt{x} + 6 = -18$

5. $\left|\frac{x}{5}\right| = 4$

6. $\frac{1}{2}(x + 4)^3 + 2 = 5$

$$7. \sqrt[3]{x-3} - 6 = -12$$

$$8. 6|5x-1| + 4 = 88$$

$$9. \sqrt{3x-2} - 8 = 0$$

$$10. \frac{1}{3}|x-7| = 2$$

$$11. 3(2x-3) = 6$$

$$12. 2\sqrt[4]{4x+5} + 6 = 16$$

$$13. \sqrt{x^2-8} = x-7$$

$$14. \sqrt{d^2-4ef} = g \text{ solve for } d$$