

Name _____

Date _____ Pd. _____

Notes: Solving Equations with the Variable on Each Side

Variables on Each Side To solve an equation with the same variable on each side, first use the Addition or the Subtraction Property of Equality to write an equivalent equation that has the variable on just one side of the equation. Then solve the equation.

Example 1

Solve $5y - 8 = 3y + 12$.

Example 2

Solve $-11 - 3y = 8y + 1$.

Example

Solve $4(2a - 1) = -10(a - 5)$.

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Exit Card: Solving Equations with the Variable on Each Side

Terry is deciding on a telephone-calling plan. She has two choices, as shown in the table below.

ECR

Phone Plan	Monthly Fee	Cost Per Minute
A	\$12	\$0.15
B	\$2	\$0.35

- Let x represent the number of minutes Terry plans to call.
Write an expression for Terry's total cost for phone plan A.
Write an expression for Terry's total cost for phone plan B.
- For how many minutes will the total cost of plan A and plan B be equal? Use mathematics to explain how you determined your answer. Use words, symbols, or both in your explanation.
- Terry thinks she will talk for 120 minutes per month. To spend the least amount of money, which plan should Terry choose? Use mathematics to justify your answer.

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Homework: Pages 152 – 153 (17, 19, 21, 27, 36, 44, 45)

17. $3k - 5 = 7k - 21$

19. $8s + 9 = 7s + 6$

21. $\frac{1}{4} - \frac{2}{3}y = \frac{3}{4} - \frac{1}{3}y$

27. $4(f - 2) = 4f$

36. $18 - 3.8t = 7.36 - 1.9t$

44. When exercising, a person's pulse rate should not exceed a certain limit, which depends on his or her age. This maximum rate is represented by the expression $0.8(220 - a)$, where a is age in years. Find the age of a person whose maximum pulse is 152.

45. Traditionally, nails are given names such as 2-penny, 3-penny, and so on. These names describe the lengths of the nails. What is the name of a nail that is $2\frac{1}{2}$ inches long. [Length for an x -penny nail = $1 + \frac{1}{4}(x - 2)$]