Name:_____ Date:_____
Notes
Algebra Section 3.4
Pages 154-159

Goal: "I will solve equations with variable on both sides"
"I will decide if an equation has one solution, no solution, or an infinite number of solutions"

Backwards Alphabet

You still follow the backwards alphabet.

When you get to _____ step, you need to get rid of one of the

_____ by _____ or _____ it from both sides.

Examples:

$2x + 6 = 3x + 3$ $8 - 2x = 3x - 7$ $2x + 5 = -8x - 3$

Try These:

Ex: $7 - 8x = 4x - 17$

Ex: $13 + 5x = 2x - 7$

Ex: $3x + 6 = 7x - 10$

Ex: $-2x + 3 = 3(2x - 7)$

Ex: $9x - 5 = \frac{1}{4}(16x + 60)$

Ex: $4x - 5 = \frac{1}{5}(5x + 20)$

Word Problems:

Ex: Sally is a spender. She got $240 for her birthday. She spends $15 a week for *w* weeks. Trevor is a saver. He has $40 and is saving $10 a week for *w* weeks by mowing lawns. In how many weeks will they have the same amount of money?

Expression for Sally: _____ Expression for Trevor: _____

Equation: _____
Solve:

Answer (written in a full sentence): _____

_____

Ex: A car dealership sold 78 new cars and 67 used cars this year. The number of new cars sold by the dealership has been increasing by 6 cars each year. The number of used cars sold by the dealership has been decreasing by 4 cars each year. If these trends continue, in how many years will the number of new cars sold be twice the number of used cars sold?

Expression for new cars:_____ Expression for used cars:_____

Equation: _____
Solve:

Answer (written in a full sentence): _____

_____

Ex: A music website sold 94 single songs and 67 albums today. The number of single downloads has been increasing by 22 each day and the number of album downloads has been decreasing by 5 each day. If these trends continue, in how many days will the number of single downloads be ten times the number of album downloads?

Expression for single songs: _____ Expression for albums: _____

Equation: _____
Solve:

Answer (written in a full sentence): _____

_____

Solutions

Solve means to _____ all _____ that make the _____ true.

When solving equations with variable on both sides you can have:
_____ solution (looks like $x = 4$)
_____ solution (looks like 4=7)
_____ _____ _____ (looks like 6=6)

Examples:

$6x = 3(2x - 1)$ $4x + 2 = 2(2x + 1)$ $2(x - 4) = 6x + 4$

This means: This means: This means:

Try These:

Ex: $3x = 3(x + 4)$

Ex: $2x + 10 = 2(x + 5)$

Ex: $5x - 6 = (x - 1)5$

Ex: $4(3x + 2) = 2(6x + 4)$

Ex: $3(4x + 6) = 9(2x + 2)$

Ex: $-3(2x - 7) = 6(4 - x)$

Find the perimeter of the square.