

3.4: Solve Equations with Variables on Both Sides

Goals: *Solve an equation with variables on both sides

*Decide if an equation has one solution, no solution or an infinite number of solutions

To solve an equation with variables on both sides:

S –

D –

C –

B – 1st:

2nd:

A –

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

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

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

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

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?

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?

****RECALL (from 1.4)****

SOLUTION:

The directions “Solve” really mean:

When solving equations with variables on both sides the equation can have:

1 solution:

No solutions:

or

All Real Numbers (could be solutions):

Solve:

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.

Ex:

