8.4 Solving Linear Equations with Variables on Both Sides

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Solve:

$$3x - 5 = 2x + 2 + 3$$

x on both sides!!

STEP 1: Simplify each side
STEP 2: group variables on 1 side, numbers on the other using addition and subtraction
STEP 3: simplify again if needed
STEP 4: group variables on 1 side, #s on the other using division

Ex. #1

(a.) $4x = 63 - 3x$

$+3x \quad +3x$

$7x = 63$

$x = 9$

(b.) $6x + 15 = 2x + 7$

$-15 \quad -15$

$6x = 2x - 8$

$-2x \quad -2x$

$4x = -8$

$x = -2$

Ex. #2

(a.) $\frac{x}{3} \overset{\times 2}{-} \frac{3x}{2} \overset{\times 3}{=} \frac{1}{6} - \frac{x}{1} \overset{\times 6}{}$

- make them all common denominators.

$\frac{2x}{6} - \frac{9x}{6} = \frac{1}{6} - \frac{6x}{6}$

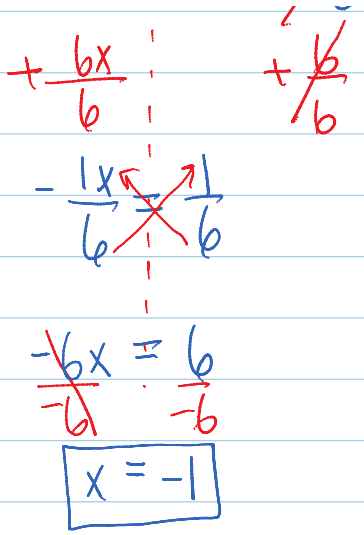
- simplify

$-\frac{7x}{6} = \frac{1}{6} - \frac{6x}{6}$

- group variables using + / −

$+\frac{6x}{1} \quad +\frac{6}{1}$

- simplify



- simplify

- group variables on 1 side / #'s on the other using ÷

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