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Solving Equations With Variables on Both Sides

To solve equations with variables on both sides you can use the properties of equality and inverse operations to write a series of simpler equivalent equations.

Examples:

1) $4x - 24 = 8x$

2) $6 - 4x = 3x - 8$

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On your own...

5) $4(x + 2) = 3x - 15$

6) $6 - 2x = 4x - 12$

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3) $3x - 7 = 4(2 - x)$

4) $3(2x - 5) = 5(x + 4)$

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Application

7) Dan Druff is vacationing in Chicago. He wants to visit the Willis Tower and needs to take a taxi cab to get there. Yellow cabs charge \$3 plus \$0.50 per mile. Orange cabs charge \$5 plus \$0.25 per mile. At what distance would Dan be charged the same amount by either type of cab?

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The surprising/strange equations...

$$8) 3x + 7 = 3(x - 5)$$

$$9) 4 + 8x = 5x + 4 + 3x$$

$$10) 5(x - 2) = 4(x + 1) + x - 14$$

$$11) 3 - 4x = 2(4 - 2x)$$