

Problem of the Day: Solve for the given variable.
 $3(2x - 5) + 2x = 17$
 ~~$6x - 15 + 2x$~~ $8x - 15 = 17$ $+15$ $8x = 32$ $\div 8$ $x = 4$

Plan for the Day:
 Notes on solving equations with variables on both sides
 More practice with solving equations with variables on both sides
 Objective: We will be able to solve equations with variables on both sides.
 Today is National Just Because Day!!

Rules:
 1. use the distributive property to get rid of the parentheses if needed
 2. get the variables on the same side of the equation- do this by using the opposite operation and moving it to the other side
 3. solve like normal
 4. plug answer back in to check

Example $3(x - 1) = 11 - 4x$
 $3x - 3 = 11 - 4x$
 $+4x$
 $7x - 3 = 11$
 $+3$
 $7x = 14$
 $\div 7$
 $x = 2$

check: $3(2-1) = 11 - 4(2)$
 $3 \cdot 1 = 11 - 8$
 $3 = 3$

Example 1: Solve. $3x + 6 = 16 - 2x$
 $+2x$
 $5x + 6 = 16$
 -6
 $5x = 10$
 $\div 5$
 $x = 2$

Example 2: Solve. $4x - 8 = 28 + 4x$
 $-4x$
 $-8 = 28$ false
 NO SOLUTION

Example 3: Solve. $-8 + 1 + 7n + 4 = 6n - 8$
 $7n - 3 = 6n - 8$
 $-6n$
 $n - 3 = -8$
 $+3$
 $n = -5$

Example 4: Solve. $4(x - 2) = -4(-x + 1) - 4$
 $-4 = -4$
 $-12 = -12$
 $216 = 216$
 $4x - 8 = 4x - 4 - 4$
 $-4x - 8 = -4x - 8$
 $-8 = -8$ true
 all real numbers

Example 5: Solve. $2(x - 3) + 5 = 3(x - 1)$
 $2x - 6 + 5 = 3x - 3$
 $2x - 1 = 3x - 3$
 $-2x$
 $-1 = x - 3$
 $+3$
 $x = 2$

Example 6: Solve. $8m + 3 = 5(m + 3)$
 $8m + 3 = 5m + 15$
 $-5m$
 $3m + 3 = 15$
 -3
 $3m = 12$
 $\div 3$
 $m = 4$