**ML #5: Solving Equations with Variables on Both Sides (Unit 2 MATH 7 PLUS)**

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| **Steps for Solving Equations with Variables on Both Sides**   1. Use Subtraction Rules 2. Distribute to get rid of parentheses 3. Combine like terms 4. Get the constants on one side of the equation and the terms with variables on the other side of the equation using the additive inverse 5. Use the multiplicative inverse to get the variable isolated 6. Check your solution |
| **EXAMPLES**  **Solve and Check**   1. 4x + 4 = 2x + 36 2. 5(n - 3) = 2n - 6   3. -2(y + 6) = y + 3 + 2y 4. -4c - 6 = -2c |

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| **WORD PROBLEMS: Define the variable, set up the equation and solve.**   1. The product of 4 and x, plus 9 is equal to the difference of 21 and the product of 2 and x. 2. Jim has $60 and Bob has $120. Jim is saving $7 per week and Bob is saving $5 per week. How many weeks will it take for Jim and Bob to have the same amount of money? How much money will they have? 3. The figures have the same perimeter. Find the lengths of the sides in the triangle and rectangle. Find the perimeter of the triangle and the rectangle. (figures not drawn to scale)   3x  2x + 8  2x + 8  3x  x + 10    6x |

Practice for Mini-lesson #5 (Math 7+)

1. -15 + 6m = -8m + 13
2. 6(g + 3) = -2(g + 31)
3. 9 + 5r = -17 - 8r
4. 5r + 6 - 2r = 7r - 10

1. Lyle, Kyle and Cliff were playing basketball. Lyle shot 3 times as many baskets as Cliff. Kyle shot 12 more baskets than Cliff. If Lyle and Kyle shot the same number of baskets, how many baskets did each boy shoot?
2. Your friend took you to a skateboard park and you loved it! The park has two plans. You can rent a skateboard for $14 and then it cost $4 for every hour of skating. If you have your own board it costs $ 6 per hour. How many hours would you have to skate for the cost to be the same?
3. The figures have the same perimeter. Find the lengths of the sides in the triangle and rectangle. Find the perimeter of the triangle and rectangle. (figures not drawn to scale)

Equilateral triangle Square

2x + 4

4x - 2