Lesson B3: Evaluating Expressions

1. What are some social causes you care about? Write about a cause that is most important to you and why it is important.

Some common social causes that students and adults alike care about include:

College Affordability Racial Justice: Black Lives Matter Food Deserts

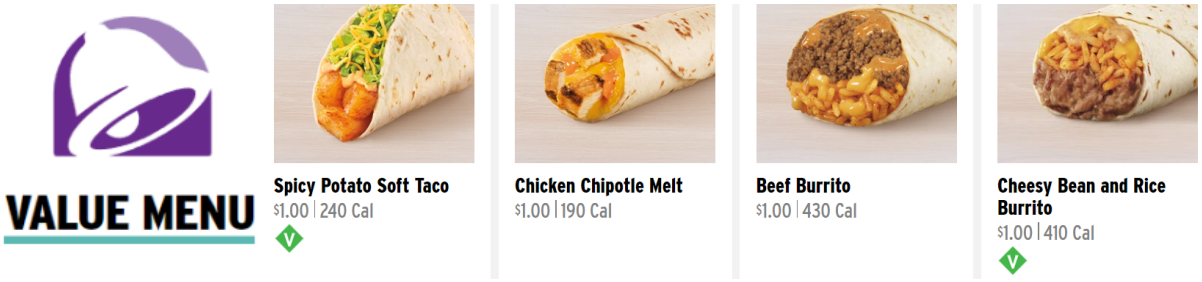
Climate Change Gun Control Gender Equality and Equal Pay

Immigration Reform LGBTQIA Rights Voting Rights

Hunger and Homelessness Humane Treatment of Animals

Another Social Cause is the Healthy Food Movement

This movement broadly seeks to increase better eating in the United States. The movement emphasizes locally grown foods and more greens. The challenge they are currently facing is how to work with the fast-paced American lifestyle in which grab-and-go foods are the norm.



2. The Smith family placed an order using only value menu items pictured above. Based on the expression below, can you tell what they ordered? Explain your thinking to your partner.

$$190\,(3) + 410\,(2) + 240\,(2) + 430(4)$$

3. You find out the Smith family is a family of 4. Given that the average person should have a 2,000 calorie diet, do you think this family is consuming a reasonable amount of calories for dinner? Explain your thinking to your partner.

4. Take a look at the Group section of the Taco Bell Menu. Can you tell what was ordered from the group menu?

   Which expression helped you discover the order?
   - 3p
   - 3(4t + 4b)
   - (4t + 4b) + (4t + 4b) +(4t + 4b)
   - 12t + 12b

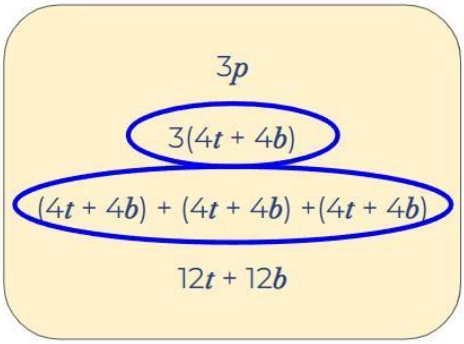
5. Take the Group section of the Taco Bell Menu further...
   a. What do the variables and coefficients mean in each expression in the box below?

3p	_____
3(4t + 4b)	_____
(4t + 4b) + (4t + 4b) +(4t + 4b)	_____
12t + 12b	_____

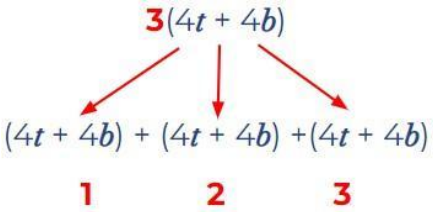
   b. Which expression would you use to find the total calories of the party order? Why?

Discussion

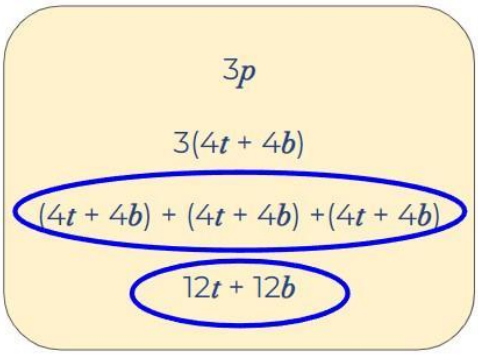
The expression in the second line is equivalent to the expression in the third line.

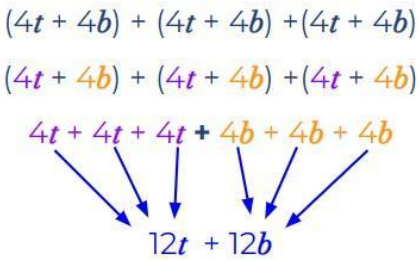


The 3 in front of the parentheses indicates 3 groups of (4t + 4b), therefore the third expression is the expanded form of the second expression.



The expression in the third line is also equivalent to the expression in the fourth line. The like terms in the third expression are combined using addition to simplify the expression to its final form in line 4.





Why can't we add the coefficients to simplify the expression further?
Let's remind ourselves of what the terms represent in the original context:

The variable t represents the calories in a taco
The variable b represents the calories in a burrito
The coefficient 12 represents the quantity of each menu item in the pack

Therefore, we cannot combine the final two terms because the variables are different and represent different quantities

Practice

Simplify each expression below by combining like terms

6. $3x + 2y + 2y$

7. $5x - 2x + y + y + 3x$

8. $1y + 3y - 5 + 4x - 4y$

9. $3z + z + 6 + 8x - 1$

Summary

10. Think about the fast-food menus you explored today.
    Is there anything that you have a new outlook about or something you may do differently in the future?

11. How did your knowledge of like and unlike terms help you identify/create equivalent expressions?