

**Lesson Summary**

- An expression is a number or a letter, which can be raised to a whole number exponent. An expression can be a product whose factors are any one of the entities described above. An expression can also be the sum or difference of the products described above.
- To evaluate an expression, replace each variable with its corresponding numerical value. Using order of operations, the expression can be written as a single numerical value.
- When numbers are substituted into all the letters in an expression and the results are the same, then the expressions are equivalent.

**Problem Set**

1. Sally is paid a fixed amount of money to walk her neighbor's dog every day after school. When she is paid each month, she puts aside \$20 to spend and saves the remaining amount. Write an expression that represents the amount Sally will save in 6 months if she earns  $m$  dollars each month. If Sally is paid \$65 each month, how much will she save in 6 months?
2. A football team scored 3 touchdowns, 3 extra points, and 4 field goals.
  - a. Write an expression to represent the total points the football team scored.
  - b. Write another expression that is equivalent to the one written above.
  - c. If each touchdown is worth 6 points, each extra point is 1 point, and each field goal is 3 points, how many total points did the team score?
3. Write three other expressions that are equivalent to  $8x - 12$ .

4. Profit is defined as earnings less expenses (earnings – expenses). At the local hot-air balloon festival, the Ma & Pops Ice Cream Truck sells ice cream pops, which cost them \$0.75 each, but are sold for \$2 each. They also paid \$50 to the festival’s organizers for a vendor permit. The table below shows the earnings, expenses, and profit earned when 50, 75, and 100 ice cream pops were sold at the festival.

Number of Pops Sold	Earnings	Expenses	Profit
50	$50(2) = 100$	$50(0.75) + 50$ $37.5 + 50 = 87.5$	$100 - 87.5 = 12.50$
75	$75(2) = 150$	$75(0.75) + 50$ $56.25 + 50 = 106.25$	$150 - 106.25 = 43.75$
100	$100(2) = 200$	$100(0.75) + 50$ $75 + 50 = 125$	$200 - 125 = 75$

- Write an expression that represents the profit (in dollars) Ma & Pops earned by selling ice cream pops at the festival.
- Write an equivalent expression.
- How much of a profit did Ma & Pops Ice Cream Truck make if it sold 20 ice cream pops? What does this mean? Explain why this might be the case.
- How much of a profit did Ma & Pops Ice Cream Truck make if it sold 75 ice cream pops? What does this mean? Explain why this might be the case.