UNIT 5: 3.1 Solving Equations

Ⓐ The school choir is selling boxes of greeting cards to raise money for a trip. The equation for the profit in dollars P in terms of the number of boxes sold s is

$$P = 5s - (100 + 2s)$$

1. What information do the expressions $5s$ and $100 + 2s$ represent in the situation? What information do 100 and $2s$ represent?

2. Use the equation to find the number of boxes the choir must sell to make a \$200 profit. Explain.

3. How many boxes must the choir sell to break even? Explain.

4. Write a simpler expression for profit. Explain how your expression is equivalent to the original expression for profit.

5. One of the choir members wrote the following expression for profit: $5s - 2(50 + s)$. Explain whether this expression is equivalent to the original expression for profit.

Ⓑ Describe how to solve an equation that has parentheses such as $200 = 5s - (100 + 2s)$ without using a table or graph.

Ⓒ Solve each equation for x when $y = 0$. Check your solutions.

1. $y = 5 + 2(3 + 4x)$
2. $y = 5 - 2(3 + 4x)$
3. $y = 5 + 2(3 - 4x)$
4. $y = 5 - 2(3 - 4x)$