Example 3

Helen purchased 3 books from an online bookstore and received a 20% discount. The shipping cost was $10 and was not discounted. Write an expression that can be used to represent the total amount Helen paid for 3 books plus the shipping cost. Identify each term, coefficient, constant, and factor of the expression described.

1. Translate the verbal expression into an algebraic expression.

   Let x represent the unknown price. The expression used to represent the total amount Helen paid for the 3 books plus shipping is $3x - 0.20(3x) + 10$.

2. Simplify the expression.

   The expression can be simplified by following the order of operations and combining like terms.

$3x - 0.20(3x) + 10$	Multiply 0.20 and $3x$.
$3x - 0.60x + 10$	Combine like terms: $3x$ and $-0.60x$.
$2.4x + 10$	

3. Identify all terms.

   There are two terms in the described expression: the product of 2.4 and x, and the shipping charge of $10: 2.4x$ and 10.

4. Identify the factors.

   $2.4x$ is the product of the factors 2.4 and x.

5. Identify all coefficients.

   2.4 is multiplied by the variable, x; therefore, 2.4 is a coefficient.

6. Identify any constants.

   The number that does not change in the expression is 10; therefore, 10 is a constant.