



# Rewriting Equations for Perspectives

Let's match and rewrite linear equations.

## 18.1

## No Bad Apples



Which option would you select? Use mathematical reasoning to explain your choice.

Option A: Each apple costs \$0.97 and is on sale with a "Buy 2, Get 1 Free" offer.

Option B: Bags of 6 apples are on sale "2 for \$7.50" but you must buy 2 bags.

A person has collected a lot of money for providing clothing to those in need. The person goes to a store to buy several clothing items with the money collected.

Take turns with your partner to match a description of a situation with an equation that represents the situation. Be prepared to explain your reasoning.

- For each match that you find, explain to your partner how you know it's a match.
- For each match that your partner finds, listen carefully to their explanation. If you disagree, discuss your thinking and work to reach an agreement.

- |   |   |
|---|---|
| 1. A store charges \$6 for each shirt sold. A person buys $x$ shirts and pays $y$ dollars for the total.  | <ul style="list-style-type: none"><li>• <math>y = 6x</math></li></ul>   |
| 2. A store charges \$6 for each pair of shorts sold. They also offer a \$3 coupon to be used on the entire order. A person buys $x$ pairs of shorts and pays $y$ dollars for the total after using the coupon.  | <ul style="list-style-type: none"><li>• <math>y = \frac{6x}{3}</math></li><li>• <math>y = \frac{3x}{6}</math></li><li>• <math>y = 3x - 6</math></li><li>• <math>y = 6x - 3</math></li><li>• <math>y = 6x + 3</math></li></ul> |
| 3. A store charges \$6 for 3 pairs of socks. A person buys $x$ pairs of socks and pays $y$ dollars for the total.   |   |
| 4. A store charges \$6 for each pair of shoes sold and also charges \$3 to lace up all of the shoes in the entire order. A person buys $x$ pairs of shoes and pays $y$ dollars for the total including lacing up all the shoes.   |   |
| 5. A store charges \$3 for 6 handkerchiefs. A person buys $x$ handkerchiefs and pays $y$ dollars for the total.   |   |
| 6. A store charges \$3 for each pair of gloves sold. They also offer a \$6 coupon to be used on the entire order when there are more than 4 pairs of gloves purchased. A person buys $x$ pairs of gloves (with $x > 4$ ) and pays $y$ dollars for the total after using the coupon. |   |

## 18.3 Isolate the $x$

Rearrange the equations so that one side of the equation is only  $x$ . Be prepared to explain or show your reasoning.

1.  $T = x - 2$

2.  $T = 2x$

3.  $T = 2x - 1$

4.  $T = \frac{x}{2}$

5.  $T = 2(x - 1)$

6.  $T = \frac{x-1}{2}$