Finding the Final Price after Multiple Discounts

When you have two discounts on the same item, the final price can depend on the order in which you calculate the discounts.

EXAMPLE 5   **Calculating Multiple Discounts**

Each day in the United States, millions of coupons are distributed by mail, newspapers, and e-mails. You acquire a coupon for a pair of jeans.

$**10**^{off}

Any pair of jeans.

Coupon must be presented
at the time of transaction.
Good through June 30, 2012.

A pair of jeans retails for $40 and is being sold at a store that is having a "25% off" sale on all clothing.

a. What is the final price when you first take 25% off, and then subtract $10?

b. What is the final price when you first subtract $10, and then take 25% off?

SOLUTION

a. Begin by taking 25% off.

Original price   25% discount

$$40 - 0.25(40) = 40 - 10 = \$30$$

Then use the coupon.

Coupon

$$30 - 10 = \$20$$

The final price is $20.

b. Begin by using the coupon.

$$40 - 10 = \$30$$

Then take 25% off.

$$30 - 0.25(30) = 30 - 7.50 = \$22.50$$

The final price is $22.50.

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Suppose the coupon in Example 5 is for 10% off, rather than $10 off. Would the order in which you apply the discounts make a difference in the final price? Explain your reasoning.

Jeans were invented in 1873 by Levi Strauss and Jacob Davis.