Discounts, Markups, Sales Tax, and Tips

You solved percent problems. You’ll find discounts, markups, sales tax, and tips. So you can find the price of a scooter, as in Ex. 13.

In the Real World

Clothing You buy a pair of jeans that is 33% off the original price of $29. What is the sale price?

A decrease in the price of an item is a discount. To find the sale price of an item, do the following:

1. Find the amount of the discount.
2. Subtract the discount from the original price.

EXAMPLE 1 Finding a Sale Price

Use the following steps to find the sale price of the jeans described above.

1. Find the amount of the discount.
   Discount = \( \frac{33\%}{100} \) of $29
   \[
   = 0.33 \times 29 \quad \text{Write 33\% as a decimal.}
   \]
   \[
   = 9.57 \quad \text{Multiply.}
   \]

2. Subtract the discount from the original price.
   Sale price = Original price − Discount
   \[
   = 29 − 9.57 = 19.43
   \]

ANSWER The sale price is $19.43.

Markup A retail store buys items from manufacturers at wholesale prices. The store then sells the items to customers at higher retail prices. The increase from the wholesale price to the retail price is the markup. To find the retail price of an item, do the following:

1. Find the amount of the markup.
2. Add the markup to the wholesale price.
Lesson 9.7  Discounts, Markups, Sales Tax, and Tips

Sales Tax and Tips
Sales tax and tips are amounts that are added to the price of a purchase. Sales tax and tips are usually calculated using a percent of the purchase price.

**Example 2**  Finding a Retail Price

**Skateboards** A store that sells skateboards buys them from a manufacturer at a wholesale price of $57. The store's markup is 150%. What is the retail price?

**Solution**

1. Find the amount of the markup.

   Markup = 150% of $57
   
   \[ 0.15 \times 57 = 8.55 \]

2. Add the markup to the wholesale price.

   Retail price = Wholesale price + Markup
   
   \[ 57 + 8.55 = 65.55 \]

**Answer** The retail price is $142.50.

**Example 3**  Finding Sales Tax and Tip

**Restaurants** At a restaurant, you order a meal that costs $12. You leave a 20% tip. The sales tax is 5%. What is the total cost of the meal?

**Solution**

1. Find the tip.

   20% of $12 = 0.20 \times 12 = 2.40

2. Find the sales tax.

   5% of $12 = 0.05 \times 12 = 0.60

3. Add the food bill, tip, and sales tax.

   \[ 12 + 2.40 + 0.60 = 15.00 \]

**Answer** The total cost of the meal is $15.00.

**Your turn now** Solve the following problems.

1. A store is selling all flip-flops at 20% off their original price. What is the sale price of a pair of flip-flops originally priced at $20?

2. A store buys guitars from a manufacturer at a wholesale price of $38. The store's markup is 85%. What is the retail price?

**Sales Tax and Tips** Sales tax and tips are amounts that are added to the price of a purchase. Sales tax and tips are usually calculated using a percent of the purchase price.

**Watch Out!** The tip at a restaurant is based on the food bill only. Do not include the sales tax when finding a tip.
### Getting Ready to Practice

**Vocabulary** Based on the calculations shown, identify the dollar value or percent that matches the description.

1. Original price
2. Amount of sales tax
3. Total cost
4. Sales tax percent

5. **Guided Problem Solving** A video game is on sale for 25% off the original price. The original price is $48. What is the sale price?

   1. What is 25% of the original price?
   2. Is the amount from Step 1 a discount or a markup? What must you do with this amount?
   3. Find the sale price.

### Practice and Problem Solving

In Exercises 6–11, use the given information to find the new price.

6. Original price: $36
   - Discount: 30%

7. Wholesale price: $55
   - Markup: 50%

8. Food bill before tax: $25
   - Sales tax: 6%

9. Food bill before tax: $45
   - Tip: 15%

10. Wholesale price: $70
    - Markup: 125%

11. Original price: $24
    - Discount: 20%

12. **Estimate** A baseball hat with an original price of $19 is on sale for 10% off the original price. Estimate the sale price.

13. **Sporting Goods** A sporting goods store purchases in-line skates, skateboards, and scooters for the wholesale prices listed in the table. Find the retail price of each item.

<table>
<thead>
<tr>
<th>Item</th>
<th>Wholesale Price</th>
<th>Markup</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-line skates</td>
<td>$80</td>
<td>105%</td>
</tr>
<tr>
<td>Skateboard</td>
<td>$100</td>
<td>125%</td>
</tr>
<tr>
<td>Scooter</td>
<td>$60</td>
<td>110%</td>
</tr>
</tbody>
</table>

14. **Compare** Your dinner bill for Monday evening is $22.79. You leave a 20% tip and are charged 7% sales tax. Your dinner bill for Tuesday evening is $23.84. You leave a 15% tip and are charged 6% sales tax. For which meal do you pay more?

15. **Critical Thinking** A $140 car stereo is marked up 50% and then discounted 50%. Will the final price of the car stereo be $140? Explain.
16. **Explain** If you know the sales tax amount and the total cost of an item, explain how you can find the original price of the item.

17. **Books** You have a $20 gift card from a bookstore that you use to buy two books for $18.49. The sales tax is 5.75%. Will your gift card cover the cost? Explain.

18. **Jackets** You have $50 to spend at a clothing store. You find a jacket that is on sale for 15% off the original price. If the original price of the jacket is $60 and there is no sales tax, do you have enough money to buy the jacket? Explain.

19. **Watercolor Kit** You have a coupon for an additional 25% off the price of any sale item at a store. The store has put a watercolor kit on sale for 15% off the original price of $40. What is the price of the watercolor kit after both discounts?

20. **Challenge** A sign says that the price marked on all music equipment is 30% off the original price. You buy a drum set for the sale price of $315. What is the original price?

## Mixed Review

**Find the product.** *(Lesson 2.3)*

21. $0.24 \times 8$

22. $1.74 \times 0.65$

23. $0.03 \times 6.34$

24. $9.01 \times 4.7$

25. A year ago you were 56 inches tall. Now you are 63 inches tall. Find the percent of increase in your height. *(Lesson 9.6)*

**Basic Skills** Solve the following problem.

26. A flight leaves Orlando, Florida, at 7:35 A.M. and arrives in San Francisco, California, at 10:15 A.M. Orlando is 3 hours ahead of San Francisco. How long did the flight last?

## Test-Taking Practice

27. **Multiple Choice** You and 5 friends go to lunch. You plan to split the bill evenly, and you plan to leave a 20% tip. The bill comes to $55.50. The sales tax is 7%. How much will each person pay for the meal?

   A. $18.87  
   B. $13.99  
   C. $11.75  
   D. $11.66

28. **Multiple Choice** A pair of sneakers costs $46.99. You have a coupon for 15% off any purchase. What is the total cost of the sneakers after 5% sales tax is included?

   F. $37.59  
   G. $41.94  
   H. $42.29  
   I. $56.74