

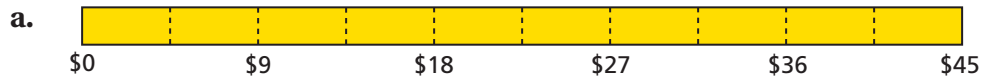
# 6.6 Discounts and Markups

## Essential Question How can you find discounts and selling prices?

### 1 ACTIVITY: Comparing Discounts

Work with a partner. The same pair of sneakers is on sale at three stores. Which one is the best buy? Explain.

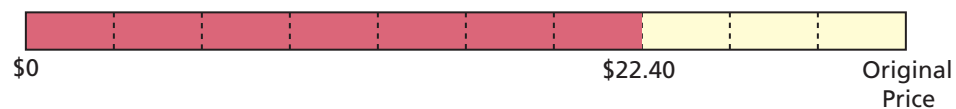
- a. Regular Price: \$45      b. Regular Price: \$49      c. Regular Price: \$39



### 2 ACTIVITY: Finding the Original Price

Work with a partner.

- a. You buy a shirt that is on sale for 30% off. You pay \$22.40. Your friend wants to know the original price of the shirt. Show how you can use the model below to find the original price.
- b. Explain how you can use the percent proportion to find the original price.



COMMON CORE

#### Percents

In this lesson, you will

- use percent of discounts to find prices of items.
- use percent of markups to find selling prices of items.

Learning Standard  
7.RP.3

### 3 ACTIVITY: Finding Selling Prices

## Math Practice 2

### Make Sense of Quantities

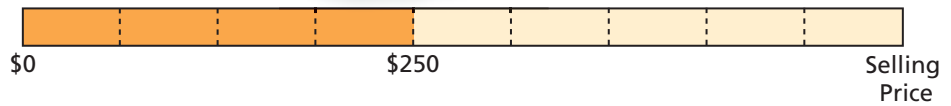
What do the quantities represent?  
What is the relationship between the quantities?

You own a small jewelry store. You increase the price of the jewelry by 125%.

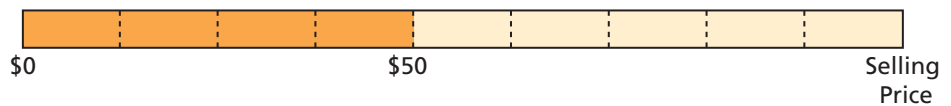
Work with a partner. Use a model to estimate the selling price of the jewelry. Then use a calculator to find the selling price.



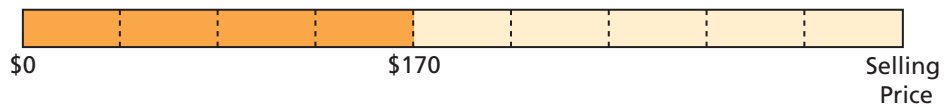
- a. Your cost is \$250.



- b. Your cost is \$50.



- c. Your cost is \$170.



## What Is Your Answer?

4. **IN YOUR OWN WORDS** How can you find discounts and selling prices? Give examples of each.

### Practice

Use what you learned about discounts to complete Exercises 4, 9, and 14 on page 250.

**Key Vocabulary**

discount, p. 248  
markup, p. 248

**Key Ideas**
**Discounts**

A **discount** is a decrease in the original price of an item.

**Markups**

To make a profit, stores charge more than what they pay. The increase from what the store pays to the selling price is called a **markup**.

**EXAMPLE 1 Finding a Sale Price**

The original price of the shorts is \$35. What is the sale price?

**Method 1:** First, find the discount. The discount is 25% of \$35.



$$a = p \cdot w$$

Write percent equation.

$$= 0.25 \cdot 35$$

Substitute 0.25 for  $p$  and 35 for  $w$ .

$$= 8.75$$

Multiply.

Next, find the sale price.

sale price	=	original price	-	discount
		= 35		- 8.75
		= 26.25		

So, the sale price is \$26.25.

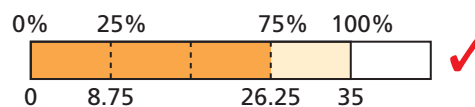
**Method 2:** First, find the percent of the original price.

$$100\% - 25\% = 75\%$$

Next, find the sale price.

$$\begin{aligned} \text{sale price} &= 75\% \text{ of } \$35 \\ &= 0.75 \cdot 35 \\ &= 26.25 \end{aligned}$$

So, the sale price is \$26.25.

**Check**

**On Your Own**

- The original price of a skateboard is \$50. The sale price includes a 20% discount. What is the sale price?

**Study Tip**

A 25% discount is the same as paying 75% of the original price.

**Now You're Ready**  
Exercises 4–8

## EXAMPLE 2 Finding an Original Price



What is the original price of the shoes?

The sale price is  
 $100\% - 40\% = 60\%$   
of the original price.

Answer the question: 33 is 60% of what number?

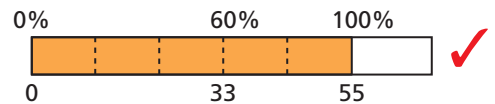
$$a = p \cdot w \quad \text{Write percent equation.}$$

$$33 = 0.6 \cdot w \quad \text{Substitute 33 for } a \text{ and } 0.6 \text{ for } p.$$

$$55 = w \quad \text{Divide each side by } 0.6.$$

So, the original price of the shoes is \$55.

**Check**



## EXAMPLE 3 Finding a Selling Price



A store pays \$70 for a bicycle. The percent of markup is 20%. What is the selling price?

**Method 1:** First, find the markup. The markup is 20% of \$70.

$$\begin{aligned} a &= p \cdot w \\ &= 0.20 \cdot 70 \\ &= 14 \end{aligned}$$

Next, find the selling price.

$$\begin{aligned} \text{selling price} &= \text{cost to store} + \text{markup} \\ &= 70 + 14 \\ &= 84 \end{aligned}$$

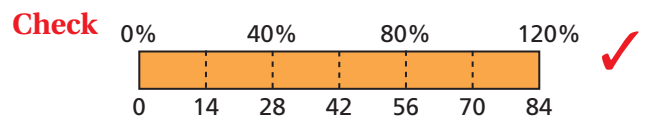
So, the selling price is \$84.

**Method 2:** Use a ratio table. The selling price is 120% of the cost to the store.

Percent	Dollars
100%	\$70
20%	\$14
120%	\$84

$\div 5$  (from 100% to 20%)  
 $\times 6$  (from 20% to 120%)  
 $\div 5$  (from \$70 to \$14)  
 $\times 6$  (from \$14 to \$84)

So, the selling price is \$84.



### On Your Own

**Now You're Ready**  
Exercises 9–13  
and 17–19

- The discount on a DVD is 50%. It is on sale for \$10. What is the original price of the DVD?
- A store pays \$75 for an aquarium. The markup is 20%. What is the selling price?

## Vocabulary and Concept Check

- WRITING** Describe how to find the sale price of an item that has been discounted 25%.
- WRITING** Describe how to find the selling price of an item that has been marked up 110%.
- REASONING** Which would you rather pay? Explain your reasoning.
  - 6% tax on a discounted price or 6% tax on the original price
  - 30% markup on a \$30 shirt or \$30 markup on a \$30 shirt

## Practice and Problem Solving

Copy and complete the table.

	Original Price	Percent of Discount	Sale Price
1 4.	\$80	20%	
5.	\$42	15%	
6.	\$120	80%	
7.	\$112	32%	
8.	\$69.80	60%	
2 9.		25%	\$40
10.		5%	\$57
11.		80%	\$90
12.		64%	\$72
13.		15%	\$146.54
14.	\$60		\$45
15.	\$82		\$65.60
16.	\$95		\$61.75



Find the selling price.

17. Cost to store: \$50  
Markup: 10%
18. Cost to store: \$80  
Markup: 60%
19. Cost to store: \$140  
Markup: 25%

20. **YOU BE THE TEACHER** The cost to a store for an MP3 player is \$60. The selling price is \$105. A classmate says that the markup is 175% because  $\frac{\$105}{\$60} = 1.75$ . Is your classmate correct? If not, explain how to find the correct percent of markup.



21. **SCOOTER** The scooter is on sale for 90% off the original price. Which of the methods can you use to find the sale price? Which method do you prefer? Explain.

Multiply \$45.85 by 0.9.

Multiply \$45.85 by 0.1.

Multiply \$45.85 by 0.9, then add to \$45.85.

Multiply \$45.85 by 0.9, then subtract from \$45.85.

22. **GAMING** You are shopping for a video game system.
- At which store should you buy the system?
  - Store A has a weekend sale. What discount must Store A offer for you to buy the system there?

Store	Cost to Store	Markup
A	\$162	40%
B	\$155	30%
C	\$160	25%

23. **STEREO** A \$129.50 stereo is discounted 40%. The next month, the sale price is discounted 60%. Is the stereo now “free”? If not, what is the sale price?

24. **CLOTHING** You buy a pair of jeans at a department store.
- What is the percent of discount to the nearest percent?
  - What is the percent of sales tax to the nearest tenth of a percent?
  - The price of the jeans includes a 60% markup. After the discount, what is the percent of markup to the nearest percent?

#### Department Store

Jeans	39.99
Discount	-10.00
Subtotal	29.99
Sales Tax	1.95
Total	31.94

*Thank You*



25. **Critical Thinking** You buy a bicycle helmet for \$22.26, which includes 6% sales tax. The helmet is discounted 30% off the selling price. What is the original price?



## Fair Game Review what you learned in previous grades & lessons

**Evaluate.** (*Skills Review Handbook*)

26.  $2000(0.085)$

27.  $1500(0.04)(3)$

28.  $3200(0.045)(8)$

29. **MULTIPLE CHOICE** Which measurement is greater than 1 meter? (*Skills Review Handbook*)

(A) 38 inches

(B) 1 yard

(C) 3.4 feet

(D) 98 centimeters