

### Facts to Know

You often hear commercials about savings at stores. Sometimes, the announcer will say in the same breath, "We're having our biggest sale of the year, and all items have been discounted by 30–50% off!"

Well, what's the difference between things being on sale and things being discounted?

Having a sale is the act of selling at lower prices than usual, as in "Dorothy's House of Dresses is having a sale on skirts and jackets."

A discount is used by manufacturers and merchants to mean taking off a certain percentage of the price given in a price list. This price is called the list price. The list price less the discount is known as the net price. The noun "discount" can be used as a verb, too—"We're discounting by 15% the list price on all new cars and trucks during our storewide 'Get into Spring' sale!"

You can ask, "What's the discount?" but you would never ask, "What's the sale?"

Often you have to figure out your own savings during a sale, and this is when an understanding of decimals and percents comes in handy.

### Sample

A local carnival is offering a single, one-day pass to all rides for \$12.50 or a special two-day pass for \$20.00. You do some quick decimal arithmetic.

So your savings on a two-day pass is \$5.00.

But what percent off is that?

$$\begin{array}{r} \$12.50 \text{ cost of 2 one-day passes} \\ \times \quad 2 \\ \hline \$25.00 \end{array}$$

$$\begin{array}{r} \$25.00 \text{ 2 one-day passes} \\ - \$20.00 \text{ special two-day pass} \\ \hline \$5.00 \end{array}$$

*cross multiply*

$$\frac{\$5.00}{\$25.00} = \frac{x}{100} \quad 25x = 500 \quad x = 20 \text{ or } 20\% \text{ off}$$



**Directions:** Complete the table.

Percent	Fraction	Decimal
25% off	1. _____	2. _____
2% down	3. _____	4. _____
0.5% interest	5. _____	6. _____
$33\frac{1}{3}\%$ off	7. _____	8. _____
40% reduction	9. _____	10. _____

**Directions:** Use the Sweetwater Train Fares schedule to answer the problems below. First, read the explanation of the schedule using the “who or what, when, where, how, or why” strategy below; it is similar to the situation samples on pages 13 and 14.

### SWEETWATER TRAIN FARES

Monday through Friday

ZONE	STATION	CLASS OF TICKET	A	B	C
A	Central Station Bar Harbor Wheaton	one-way	\$1.75		
		10-ride	\$14.90		
		monthly	\$47.25		
B	Millsburg Dairyville Greentown	one-way	\$1.95	\$1.75	
		10-ride	\$16.60	\$14.90	
		monthly	\$52.65	\$47.25	
C	Middleton Oak Ridge Mabrey	one-way	\$2.75	\$1.95	\$1.75
		10-ride	\$23.40	\$16.60	\$14.90
		monthly	\$74.25	\$52.65	\$47.25

**Who or what?** It's the table of Sweetwater train fares.

**When?** It shows the choices in fares—a one-way ticket, a 10-ride ticket, or a monthly ticket.

**Where?** The towns are grouped into zones.

**How or why?** The table shows the price of tickets from zone to zone. If you go from Central Station in Zone A to Wheaton, also in Zone A, the one-way fare is \$1.75. The one-way, 10-ride, and monthly fares are always the same within the same zone.

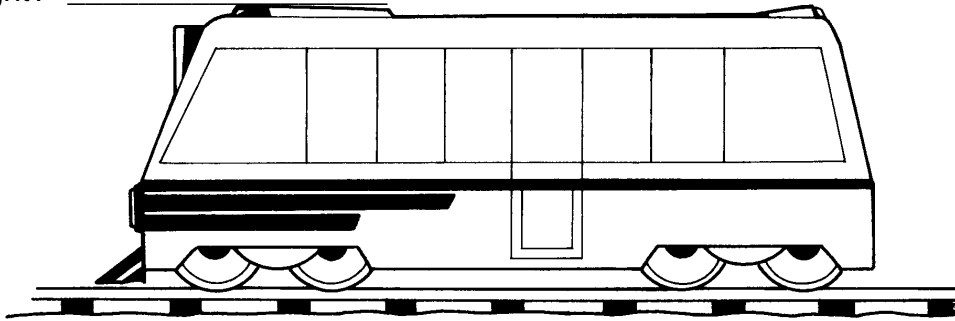
If you go from Central Station in Zone A to Middleton in Zone C, however, the one-way fare goes from \$1.75 to \$2.75. The 10-ride and monthly fares go up, too.

Wherever two zones meet, those are the fares.

## Solving Problems Involving Discounts and Sales

**Directions:** Using the Sweetwater Train Fares chart on page 33, answer the questions below.

1. What's a one-way fare within Zone B? \_\_\_\_\_
2. How much do you save by purchasing a 10-ride in Zone B over 10 one-ways?  
\_\_\_\_\_
3. A one-way ticket within Zone A (\$1.75) versus a one-way from Zone A to Zone C (\$2.75) is an increase of what percent? (Round the number.) \_\_\_\_\_
4. The monthly pass from Zone A to Zone C is \$74.25. It's worth 30 rides. How much is that per ride? (Round off.) \_\_\_\_\_ Would that be cheaper than 30 one-way tickets?
5. Mr. Miller is a sharp cookie. He says, "I only go to and from work within Zone B 20 days a month. Buying enough one-way daily passes for 20 days is cheaper than buying a monthly!" Is he right? \_\_\_\_\_
6. Mr. Miller has another bright idea. He says, "OK, I'll buy four 10-ride passes in Zone B. That's gotta be cheaper than a monthly pass with 60 rides, 20 of which I don't need!" Is he right? \_\_\_\_\_

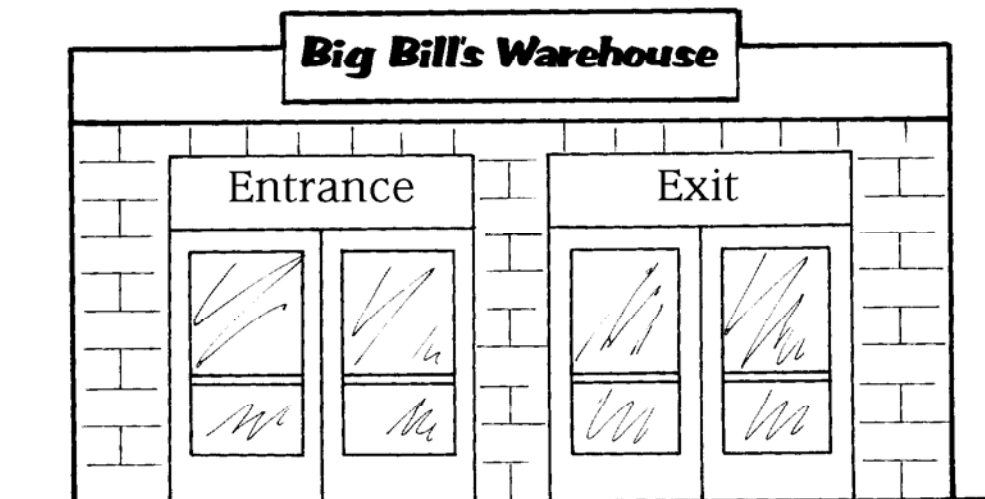


**Directions:** You have been assigned to a special TV news investigations unit looking into "Big Bill's Warehouse of Sales." Big Bill claims that everything he has is on sale and that every purchase of a sale item saves customers money. Is he telling the truth?

1. Screwdrivers at Big Bill's regularly cost \$8.98. They're on sale at 5 for \$46.95. At the sale price, how much more or less would you pay if you bought all 5 screwdrivers individually? \_\_\_\_\_
2. Big Bill made \$4,540.90 on 455 plastic garbage cans. The list price is \$7.99 each. How much did Big Bill charge for each garbage can? \_\_\_\_\_
3. Big Bill made \$4.59 profit on each can of the 323 cans of chimney wax he sold. He is supposed to get only \$3.29 profit on each one. How much extra did he make on the 323 cans? \_\_\_\_\_
4. Big Bill sold 4,000 Vampire Nightlights at \$11.19 each. This was \$1.77 more than the manufacturer said he should charge. How much more did Big Bill earn than he should have? \_\_\_\_\_

## Solving Problems Involving Discounts and Sales

5. Gutter World charged Big Bill \$3.67 each for 298 aluminum downspouts. He sold them all for \$9.09 each "on sale," he said. How much profit did he make?  
\_\_\_\_\_
6. Mrs. Green wanted to buy tulip bulbs from Big Bill for \$3.67 each. "You can have a dozen, little lady, for \$44.00." How much did Mrs. Green save? \_\_\_\_\_
7. A man purchased 180 used hamster wheels for his new invention at \$.79 each. He handed Big Bill \$200 and received \$47.80 in change. How much did Big Bill cheat him by? \_\_\_\_\_
8. Big Bill sold 7,000 plastic squirrels for \$3.99 each. He made a \$2.00 profit on each one. How much profit did he make on all 7,000 plastic squirrels? \_\_\_\_\_
9. Big Bill charged \$1.79 more for each cracked birdbath than he had paid. His price was \$7.89, and he sold a truckload of 3,500 to the forest preserve district. How much extra money did he get? \_\_\_\_\_
10. Big Bill sold 4,328 bent weather vanes at \$4.99 to the gift shop at the Peotone Airport. His profit was \$1.45 on each one. How much money did he make? \_\_\_\_\_
11. Rick's Hardware, opposite Big Bill's, is offering a 25% off Father's Day sale on a new drill that costs \$20. "I got that same drill priced at \$22 but with 30% off—so there!" announced Big Bill. Which is the better buy? \_\_\_\_\_
12. Altogether, Big Bill made a profit of \$243,000.00 last year. "I only keep 15% total for myself—that's \$27,000.00 and another \$24,300.00 for my poor old mother. All the rest goes to charity," he said, wiping a tear from his eye. How much more money than 15% of his profit did he keep? \_\_\_\_\_





- 13. 5:00 P.M.
- 14. 3:00 P.M.

**Page 18**

- 1. Wed. 10:00 A.M.
- 2. Sat. 9:00 A.M.
- 3. Sat. 7:00 A.M.
- 4. Tues. 1:00 A.M.
- 5. Fri. 1:00 A.M.
- 6. Wed. 8:00 P.M.
- 7. Thurs. 11:00 A.M.
- 8. Fri. 6:00 P.M.
- 9. Thurs. 5:00 P.M.
- 10. Mon. 3:00 P.M.
- 11. Fri. 11:00 P.M.
- 12. Mon. 12:00 A.M.

**Page 19**

- 1. e                      6. b
- 2. g                      7. c
- 3. d                      8. h
- 4. i                      9. a
- 5. f

**Page 22**

- 1. 1 quarter, 1 penny
- 2. 2 dimes, 2 pennies
- 3. 1 quarter, 2 nickels
- 4. 3 dimes, 1 penny
- 5. 5 dimes, 1 penny
- 6. 3 quarters, 2 nickels
- 7. \$1,356.00
- 8. \$14.51
- 9. \$31,978.00
- 10. \$42.69
- 11. \$6,803.00
- 12. \$14,413.00
- 13. \$85.45
- 14. \$91.86
- 15. \$9,099.00

**Page 23**

- 1. \$8,176.00
- 2. \$.83
- 3. \$4,973.00
- 4. \$1,826.00
- 5. \$54.62
- 6. \$.19
- 7. \$19,696.00
- 8. \$1.39
- 9. \$1.50
- 10. \$544.78
- 11. \$9,356.57
- 12. \$6,869.32
- 13. a. \$2.04

- b. \$2.52
- 14. a. \$2.67
- b. \$4.14
- 15. a. \$.61
- b. \$.78
- 16. a. \$2.43
- b. \$3.11
- 17. a. \$3.59
- b. \$4.72
- 18. a. \$1.79
- b. \$1.14
- 19. a. \$2.22
- b. \$3.70
- 20. a. \$3.18
- b. \$5.30

**Page 26 and 27**

- 1. \$3,076.15                      11. \$.01
- 2. \$10.89                        12. \$.02
- 3. \$2,265.34                    13. \$.05
- 4. \$1,904.22                    14. \$.03
- 5. \$1,107.44                    15. \$.04
- 6. \$1,161.30                    16. \$.02
- 7. \$13.69                        17. \$.03
- 8. 369                            18. \$2.74
- 9. \$5.99                         19. \$1.40
- 10. \$1,791.58                    20. \$.01

**Page 30 and 31**

**States' Shipping Taxes**

- 1. \$6.24
- 2. \$196.08
- 3. \$.96
- 4. \$6.30
- 5. \$42.00
- 6. \$1.72

**Restaurant Tips**

- 1. \$1.21
- 2. \$1.81
- 3. \$1.50
- 4. \$3.28
- 5. \$6.70

**Currency Exchange**

- 1. Paraguay
- 2. Brazil
- 3. \$12.00
- 4. Honduras
- 5. Belize and Ecuador

**Page 33**

- 1. 25/100
- 2. 0.25
- 3. 2/100
- 4. 0.02
- 5. 0.5/100 or 5/1000
- 6. 0.005



# Answer Key

- $\frac{33\frac{1}{3}}{100}$
- 0.333
- $\frac{40}{100}$
- .40

## Pages 34 and 35

### Sweetwater Train Fares

- \$1.75
- \$2.60
- 57%
- \$2.48; yes
- No, he needs 40 one-way tickets for 20 days, which will cost \$70 versus a monthly pass for \$47.25.
- No, four 10-ride passes cost \$59.60 while a monthly pass costs \$47.25.

### Big Bill's Warehouse of Sales

- He would pay \$2.05 more on sale.
- He charged \$9.98; \$1.99 more
- \$419.90 extra
- \$7,080.00 more
- \$1,615.16 profit
- She will save \$.04.
- Big Bill cheated him out of \$10.00.
- \$14,000.00
- \$6,265.00
- \$6,275.60
- 25% off \$20 is \$5. The drill costs \$15. 30% off \$22 is \$6.60. The drill costs \$15.40. Rick's offers the better savings.
- \$14,850

## Page 37

- \$2,000.00
- \$1,250.00
- \$1,000.00
- \$4,000.00
- \$2,500.00
- \$2,000.00
- \$10,000.00
- \$5,000.00
- \$4,000.00
- \$10,000.00
- \$8,750.00
- \$5,000.00
- \$20,000.00
- \$12,500.00
- \$10,000.00

## Page 38

- |            |             |
|------------|-------------|
| 1. \$45.00 | 6. \$34.00  |
| 2. \$45.42 | 7. \$51.25  |
| 3. \$63.72 | 8. \$22.97  |
| 4. \$10.95 | 9. \$90.00  |
| 5. \$10.00 | 10. \$49.17 |

## Pages 40 and 41

- \$7,200.00
- \$120.00
- \$4,500.00
- \$8.50
- \$152.32
- \$574.21
- \$175.00
- \$175.50
- \$108.00
- \$45.77
- \$167.44
- \$298.76
- 13 yrs
- 30 days
- 52 yrs
- 40 times; 2,400 times
- 88 minutes
- \$2.73/21 (\$0.13/minute)
- \$6.05/55 (\$0.11/minute)
- \$4.25/17 (\$0.25/minute)
- 7:00 A.M.
- 7:00 A.M.
- 8:30 A.M.
- 9:00 P.M.
- 8:30 P.M.
- 7:30 A.M.
- \$18.93
- \$1,050.00
- \$28.69
- \$2,322.60

## Pages 42–44

- 2 days 48 hours
- 114 days
- a. Yes, she arrived at 9:00 P.M. on Monday  
b. No, she arrived at 10:00 P.M. on Friday  
c. No, she arrived at 4 P.M. on Tuesday
- a. \$14.00  
b. \$42.00  
c. \$52.50  
d. \$87.50  
e. \$49.00  
f. \$105.00  
Yes, he saved \$350.00
- b. 35% off
- a. \$10.00 rebate
- a. get a second one free
- a. 40% off
- a. 30% off
- a. save \$80.00
- subtotal: \$17.19; 15% tip: \$2.76