

**Do Now:**

1.)  $1.5 * 8$

2.)  $2.6 * 6$

3.)  $0.75(5)$

4.)  $0.85(9)$

**Do Now: Complete these two problems from your printed notes sheet.**

There were about 198,000 spectators at an action sports event in 1995. The number of spectators increased by 12% from 1995 to 2002. About how many spectators were in 2002?

221,760 spectators

In 1983, the average price of an audio CD was \$21.50. By 2000, the average price had decreased by 34.8%. What was the average price of a CD in 2000?

\$14.02

13, 14, 15, 19 Change from 90 to 50

$$\textcircled{13} \quad p\% = \frac{90-50}{\cancel{90}} \rightarrow \text{original}$$

$$= \frac{40}{\cancel{90}} = \cancel{0.8} = \cancel{80}\%$$

$$\textcircled{12} \quad \begin{array}{l} \text{Orig: } 350 \\ \text{New: } 196 \end{array}$$

$$p\% = \frac{350 - 196}{350}$$

$$= 0.44$$

$$= \textcircled{44\% \text{ decrease}}$$

### 7.6 Percent Applications

7.RP  
7.EE  
8.EE

- SWBAT find markups, discounts, sales tax, and tips.
- SWBAT represent and analyze situations using algebraic symbols.

Calculators: Yes

**markup**- an increase from the wholesale price of an item to the retail price

**discount**- a decrease from the retail price of an item to the sale price

$$\text{Ret. Price} = \text{Wholesale Price} (100\% + \text{Markup})$$

↖ p% increase problem

$$\text{Sales Price} = \text{Orig. Price} (100\% - \text{Discount})$$

↖ p% decrease

$$\text{Total} = \text{Food Bill} + \text{Sales Tax} + \text{Tip}$$

$$\text{Total Cost} = \text{Bill} (100\% + \text{Sale Tax}\% + \text{Tip}\%)$$

↖ Similar to p% increase

A street vendor buys bracelets from a manufacturer for \$7 each. The vendor marks up the price by 150%. What is the retail price?

$$\begin{aligned}
 \text{Retail Price} &= 7(100\% + 150\%) \\
 &= 7(250\%) \\
 &= 7(2.50) \\
 &= 17.50
 \end{aligned}$$

\$17.50

Find the retail price of a collectible figurine with a wholesale cost of \$12 that is marked up 75%.

$$\begin{aligned}
 \text{Retail Price} &= 12(100\% + 75\%) \\
 &= 12(175\%) \\
 &= 12(1.75) \\
 &= 21
 \end{aligned}$$

\$21

You buy an electronic organizer that is on sale for 15% off the original price of \$25. Find the sale price.

$$\begin{aligned}
 \text{Sale Price} &= 25(100\% - 15\%) \\
 &= 25(85\%) \\
 &= 25(0.85) \\
 &= 21.25
 \end{aligned}$$

\$21.25

Mason buys a suit that is on sale for 20% off the original price of \$180. What is the sale price?

$$\begin{aligned}
 \text{Sales Price} &= 180(100\% - 20\%) \\
 &= 180(80\%) \\
 &= 180(0.80) \\
 &= 144
 \end{aligned}$$

\$144

The bill for your restaurant meal is \$22. You leave a 15% tip. The sales tax is 6%. What is the total cost of your meal?

$$\text{Total Cost} = 22(100\% + 15\% + 6\%)$$

$$\begin{aligned} &= 22(121\%) \\ &= 22(1.21) \\ &= 26.62 \end{aligned}$$

Find Tip

$$\begin{aligned} \text{Total Cost} &= 22(100\% + 15\%) \\ &= 22(115\%) \\ &= 22(1.15) \\ &= 25.30 \end{aligned}$$

\$25.30

- 22.00

\$3.30 tip

---


$$22(15\%)$$

$$22(0.15)$$

$$3.3$$

$$\text{\$3.30}$$

The bill for a family's meal at a restaurant is \$68. They leave a 15% tip. The sales tax is 6%. What is the total cost of the meal?

$$\text{Total Cost} = 68(100\% + 15\% + 6\%)$$

$$\begin{aligned} &= 68(121\%) \\ &= 68(1.21) \\ &= 82.28 \end{aligned}$$

$$\begin{aligned} \text{Tip} &= 68(15\%) \\ &= 68(0.15) \\ &= 10.2 \end{aligned}$$

$$\text{\$10.20}$$

$$\begin{aligned} \text{Tax} &= 68(100\% + 6\%) \\ &= 68(106\%) \\ &= 68(1.06) \\ &= 72.08 \end{aligned}$$

$$\begin{array}{r} 72.08 \\ - 68.00 \\ \hline 4.08 \end{array} \quad \text{\$4.08}$$

---


$$\text{\$68} + \text{\$10.20} + \text{\$4.08} = \text{\$82.28}$$

A furniture store marks up the wholesale price of a desk lamp by 80%. The retail price is \$35. What is the wholesale price?

$$35 = (100\% + 80\%)$$

$$35 = (180\%)$$

$$35 = (1.80)$$

$$\text{\$19.44}$$

$$19.44(100\% + 80\%)$$

$$19.44(180\%)$$

$$19.44(1.80)$$

$$34.99$$

$$\text{\$35}$$

A furniture store marks up the wholesale price of a desk lamp by 80%. The retail price is \$35. What is the wholesale price?

$$\text{Retail Price} = \text{Wholesale Price} (100\% + \text{Markup}\%)$$

$$35 = x (100\% + 80\%)$$

$$35 = x (180\%)$$

$$\frac{35}{1.80} = \frac{x}{1.80}$$

$$19.44 = x$$

\$19.44

A dress store marks up the wholesale price of a prom dress by 15%. The retail price is \$180. What is the wholesale price?

$$\text{Wholesale Price} = 180 \div (100\% + 15\%)$$

$$180 \div (215\%)$$

$$180 \div (2.15)$$

$$= \text{About } \$83.72$$

$$180 = x (100\% + 15\%)$$

$$180 = x (215\%)$$

$$\frac{180}{2.15} = \frac{x}{2.15}$$

$$83.72 = x$$

\$83.72

### Exit Pass 7.6

Describe a method for finding the sales price of an item if you know the original price and the discount percent.

"Don't blame the sea if you cannot catch a fish."

Working individually or with a partner, complete the workbook.

Workbook pg.



**Reflection of Today's Lesson****7.6 Percent Applications**

7.RP  
7.EE  
8.EE

- SWBAT find markups, discounts, sales tax, and tips.
- SWBAT represent and analyze situations using algebraic symbols.

Calculators: Yes

**Homework**

pg. 360 #8-23

ALL

