

Applications: Percent Change

Sale Price and Percent Change

- A. Shirts that normally sell for \$25 are marked down 10%. Find the sale price before taxes.

Unknowns: $S = \text{Sale Price}$

$$\begin{aligned}\text{Amount of Discount} &= (\text{Rate of Discount}) \cdot (\text{Original Price}) \\ &= 10\% \cdot (25) \\ &= .10(25)\end{aligned}$$

Equations: $\text{Sale Price} = \text{Original Price} - \text{Amount of Discount}$

- B. A new fax machine was recently purchased for an office for \$464.40 including tax. If the tax rate is 8%, find the price of the fax machine before tax.

Unknowns: $P = \text{Original Price}$

$$\begin{aligned}\text{Amount of Tax} &= (\text{Tax Rate}) \cdot (\text{Original Price}) \\ &= 8\% \cdot P \\ &= .08P\end{aligned}$$

Equations: $\text{Sale Price} = \text{Original Price} + \text{Amount of Tax}$

- C. The sale price of a new iPod is \$399.20, which includes a 20% discount. Find its original price.

Unknowns: $P = \text{Original Price}$

$$\begin{aligned}\text{Amount of Discount} &= (\text{Rate of Discount}) \cdot (\text{Original Price}) \\ &= 20\% \cdot P \\ &= .20P\end{aligned}$$

Equations: $\text{Sale Price} = \text{Original Price} - \text{Amount of Discount}$

TRY:

At the end of the semester, rental textbooks go on sale at 20% off. Find the sale price of a \$110 book.