Topic: Percent markdown

Question: A bike was priced originally at $\$100$, but it's on sale for $\$80$. What is the percent markdown?

Answer choices:

A $10\,\%$

B $20\,\%$

C $30\,\%$

D $40\,\%$

Solution: B

The price of the bike was originally $\$100$, but the price is now reduced by $\$20$ ($\$100 - \$80 = \$20$). Therefore, the ratio of the discount amount to the original price is

$$\frac{\$20}{\$100}$$

$$\frac{\$20(1)}{\$20(5)}$$

$$\frac{1}{5}$$

To find the percent markdown, we convert this from a fraction to a percent.

$$\frac{1}{5} = \frac{x}{100}$$

$$1 \cdot 100 = 5x$$

$$\frac{100}{5} = x$$

$$20 = x$$

The percent markdown is $20\,\%$.

Topic: Percent markdown

Question: The regular price of an item was $\$38.00$. The item is on sale for $25\,\%$ off. What is the sale price of the item?

Answer choices:

A $\$28.50$

B $\$32.50$

C $\$25.00$

D $\$35.50$

Solution: A

The price of the item was originally $\$38.00$, but the price is now reduced by $25\,\%$, which means we need to figure out what $25\,\%$ of $\$38.00$ is.

$$25\,\% \text{ of } \$38.00$$

$$\frac{25}{100} \cdot \$38.00$$

$$\$9.50$$

That means that the sale price of the item is

$$\$38.00 - \$9.50$$

$$\$28.50$$

Alternatively, since the item is discounted by $25\,\%$, we know that it will only cost $75\,\%$ of its original price (because $100\% - 25\,\% = 75\,\%$). So we could also calculate the cost by multiplying the original price by $75\,\%$.

$$75\,\% \text{ of } \$38.00$$

$$\frac{75}{100} \cdot \$38.00$$

$$\$28.50$$

Topic: Percent markdown

Question: The price of a bicycle was marked down to $\$58.00$, and the sale price was $75\,\%$ off of the original price. What was the original price?

Answer choices:

A $\$116$

B $\$416$

C $\$232$

D $\$38$

Solution: C

Let's let x represent the original price of the bicycle. If we take $75\,\%$ off the original price, then that means the sale price is $25\,\%$ of the original price ($100\% - 75\,\% = 25\,\%$). And we know that $25\,\%$ of the original price is $\$58.00$:

$$25\,\% \text{ of } x = \$58.00$$

$$\frac{25}{100} \cdot x = \$58.00$$

$$x = \frac{100}{25} \cdot \$58.00$$

$$x = \$232.00$$

So the original price of the bicycle is $\$232.00$.