

If 35% of a number is 84, what is 45% of the same number?

- A. 102
- B. 108
- C. 115
- D. 120

35% of a number is 84

$$\frac{35}{100} \times x = 84$$

Invert

$$x = 84 \times \frac{100}{35} = 240$$

$$x = 240$$

45% of 240

$$\frac{45}{100} \times 240 = 108$$

$$\begin{aligned} 35\% \text{ of } x &= 84 \\ 45\% \text{ of } x &= ? \end{aligned}$$

less
more

$$\text{more } \frac{45}{35} \times 84 = 108$$

A student's score on a test increased from 60 to 75.
What was the percent increase in the student's score?

- A. 15%
- B. 20%
- C. 25%
- D. 30%

60 → 75
Increase 15

part
whole

$\frac{\text{Increase}}{\text{Original}} \times 100$

$\frac{15}{60} \times 100$
25%

on sale

An item originally priced at \$120 is marked down by 25%. During a clearance sale, an additional 10% is taken off the sale price. What is the final price?

- A. \$78.00
- B. \$81.00
- C. \$84.00
- D. \$90.00

$$\begin{array}{r} \text{Total } 100\% \\ \text{Down } \underline{\ominus 25\%} \\ 75\% \end{array}$$

$$\begin{array}{r} \text{Total } 100\% \\ \text{off } \underline{\ominus 10\%} \\ \underline{\underline{90\%}} \end{array}$$

1)

75% of \$120

$$\frac{75}{100} \times 120 = \boxed{\$90}$$

2)

90% of 90

$$\frac{90}{100} \times 90 = \underline{\underline{\$81}} \checkmark$$

In a school club with 120 members, 45% are seniors, 35% are juniors, and the rest are sophomores. How many members are sophomores?

- A. 24
- B. 30
- C. 36
- D. 48

Seniors 45%
Juniors 35% } 80%
Sophomores 20% of Total Students

100%

$$\frac{20}{100} \times 120 = 24$$

Water accounts for 85% of the total weight of a 40-pound watermelon. After sitting in the sun, some water evaporates, and water now accounts for 80% of the watermelon's current weight. What is the new total weight?

40 Total
6lb pulp ✓
~~34lb water~~



85% water
15% pulp × 40lbs

40lbs

$$\frac{15}{100} \times 40 = \underline{6 \text{ lbs}}$$



80% water
20% pulp

$$20\% \text{ of Total} = \underline{6 \text{ lb}}$$

$$\frac{20}{100} \times \text{Total} = 6$$

$$\begin{aligned} \text{Total} &= 6 \times \frac{100}{20} \\ &= \underline{30 \text{ lb}} \end{aligned}$$

If \$x\$ is 150% of \$y\$, then \$y\$ is what percent of \$x\$?

A. 50%

✓ B. 66.7%

C. 75%

D. 85.3%

x is 150% of y

$$x = \frac{150}{100} \times y$$

$$\frac{100}{150} \times x = y$$

+ ×
- ÷

A store owner buys an appliance for \$200 and marks it up by 40% to set the retail price. If the item later goes on sale for 20% off the retail price, what is the store's profit?

- A. \$16.00
- B. \$24.00
- C. \$40.00
- D. \$48.00

Step 1 $\left\{ \begin{array}{l} \$200 + 40\% \\ \underline{200} + \frac{40}{100}(200) = \underline{280} \end{array} \right.$

Step 2 $\left\{ \begin{array}{l} \boxed{\$280} - 20\% \\ 280 - \frac{20}{100}(280) \\ \underline{\$224} \end{array} \right.$

$$\begin{array}{r} \$50 \\ \cancel{\$20} \\ 10\% \end{array}$$

$$\begin{array}{r} \$80 \\ \ominus 8 \\ \hline 72 \end{array}$$

Bought \$150

⊕ up by 30%

⊖ Discount of 20%

$$\begin{array}{l} \text{Step 1} \} \\ 150 + \frac{30}{100}(150) \\ \underline{195} \end{array}$$

$$\begin{array}{l} \text{Step 2} \\ 195 - \frac{20}{100}(195) \\ \$ \underline{156} \end{array}$$

The population of a town ⁺¹²increased by 12% in 2021 and then decreased by 5% in 2022. Overall, what was the net percentage change in population over the two years?

- A. +6.4% ✓
- X B. +7.0%
- C. +7.1%
- D. +12.5%

$+12\%$
 -5%
 $\underline{7\%}$ } misleading
 wrong answer.

Step 1: Let The population $100 + 12\%$

$$100 + \frac{12}{100} (.100)$$

Step 2:

$$= 112$$

$$= 112 - 5\%$$

$$= 112 - \frac{5}{100} (.112)$$

$$= \underline{106.4}$$

Sale price

During a sale, a coat is priced at \$153 which reflects a 15% discount off the original price. What was the original price of the coat?

- A. \$170
- B. \$175
- C. \$180
- D. \$195

Total = 100% ✓

Discount = -15% ✓

85% of original

$\frac{85}{100} (153)$ ✗

$153 = \frac{85}{100}$ of Total

Inverse

$$\frac{100}{85} \times 153 = \text{Total}$$

$$\underline{\$180} = \text{Total}$$

A container holds 50 marbles: red, blue, and green. If 28% are red and 44% are blue, how many green marbles are in the container?

- A. 12
- B. 14
- C. 16
- D. 18

A real estate agent earns a 6% commission on the first \$200,000 of a home's selling price and a 4% commission on any amount above \$200,000. If an agent earned \$15,000 in commission, what was the home's total selling price?

A. \$275,000

B. \$300,000

C. \$325,000

D. \$375,000