

PERCENTAGES

PRAXIS FLASHCARD #59

PERCENTAGES (DEFINITION)

A **percentage** (or a percent) is a way of expressing a number, especially a ratio, as a fraction of 100. (*per* = divided by; *cent* = 100) The percent key on a calculator merely divides by 100. If your calculator doesn't have a percent key, hit the divide key and then 100. There are **three types of percentage problems** depending on what value is missing in the equation:

$$\begin{aligned} \text{What number is 15\% of 45?} &\rightarrow x = (0.15) \cdot (45) \\ \text{What percent of 45 is 15?} &\rightarrow 45 \cdot x = 15 \text{ or } 45x = 15 \\ \text{15\% of what number is 45?} &\rightarrow (0.15) \cdot x = 45 \text{ or } 0.15x = 45 \end{aligned}$$

PRAXIS FLASHCARD #60

CONVERTING PERCENTAGES TO DECIMALS & FRACTIONS

Change a **percent to a decimal** by moving the decimal point 2 places to the left and removing the percent sign: 14% = 0.14
Change a **percent to a fraction** by writing the percent as a fraction over 100 and simplifying: 14% = 14/100, which simplifies to 7/50. Remember: *per* = divided by; *cent* = 100

PRAXIS FLASHCARD #61

CONVERTING DECIMALS TO PERCENTAGES & FRACTIONS

Change a **decimal to a percent** by moving the decimal point 2 places to the right and appending a percent sign: 0.14 = 14%
Change a **decimal to a fraction** by writing the decimal over a power of 10 representing the right-most place value in the decimal, and then simplifying: 0.146 = 146/1000 = 73/500
(An easy way to find the power of 10 is to put one zero in the denominator for each decimal place in the number.)

PRAXIS FLASHCARD #63

SOLVING PERCENTAGES (USING THE PERCENT PROPORTION)

To **solve percentages** using the percent proportion, use the means-extreme property of proportions (cross multiply).
The percent proportion can be written as:

$$\frac{\text{part}}{\text{whole}} = \frac{\%}{100} \quad \text{or} \quad \frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

PRAXIS FLASHCARD #64

SOLVING PERCENTAGES (USING THE ALGEBRAIC EQUATIONS)

To solve percentages using algebra, write the problem as an algebraic statement where
what number \rightarrow variable (x)

is \rightarrow =
of \rightarrow multiply

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