Solving a Percent Equation on the ISEE

Middle and Upper Level

LESSON GOAL: Write and solve a percent equation to solve word problems and quantitative comparisons.

ISEE Question: A book is on sale for 20% off. The discounted price of the book is $18. What was the original price before the discount?

Solution: Write and then solve a percent equation that matches the word problem.

STEP 1: Identify/underline the key numbers and circle or underline what the question is asking.

A book is on sale for 20% off. The discounted price of the book is $18. What was the original price before the discount?

STEP 2: Convert the word problem into an equation. Convert percents into fractions or decimals. "Of" means "multiply" and "is" means "equal." Use a variable for your unknown value.

Helpful tip: If you're finding a discount, you must subtract the percent of the discount multiplied by the original price. (You can often do this step mentally.) Do not write $b - 0.2 = 18$. This will only subtract 20 cents, not 20% of the price!

Let b = original price

$b - 0.2b = 18$

$0.8b = 18$

STEP 3: Solve the equation.

$$0.8b = 18$$

$$\frac{0.8}{0.8}b = \frac{18}{0.8}$$

$$b = 22.5$$

The original price of the book was $22.50.