

Simple interest means that the earnings generated over a period are calculated strictly as a percentage of the original principal amount invested. The fundamental formula for simple interest is:

$$\text{Interest } (I) = \text{Principal } (P) \cdot \text{Rate } (r) \cdot \text{Time}(t)$$

When an investment spans exactly **one year** ($t = 1$), the formula simplifies to:

$$I = P \cdot r$$

When an investor splits their capital into multiple distinct funds, the **Total Interest** earned by the entire portfolio is simply the sum of the individual interests produced by each separate account:

$$\text{Total Interest} = I_1 + I_2$$

$$\text{Total Interest} = P_1 r_1 + P_2 r_2$$

Dory invested her income tax refund in two separate accounts. She invested part of it at 8% and tripled that amount at 12%. The total first year interest from the two investments was P1200. How much does she invest at 8%?

Let's break down the conditions given in the problem statement:

- **Account A (Lower Yield):** Interest rate = 8% = 0.08
- **Account B (Higher Yield):** Interest rate = 12% = 0.12
- **Principal Relationship:** The amount invested at 12% is *triple* (3 times) the amount invested at 8%.
- **Total Annual Interest:** ₱1,200

Step 1: Define the Variables

Let x represent the principal amount invested in the 8% account. Therefore, the principal amount invested in the 12% account is represented as $3x$.

Step 2: Formulate the Portfolio Interest Equation

Sum the interest yields from both accounts and set them equal to the total return of ₱1,200:

$$\text{Interest from A} + \text{Interest from B} = \text{Total Interest}$$

$$0.08(x) + 0.12(3x) = 1200$$

Step 3: Simplify and solve for x

$$x = 2,727.27$$