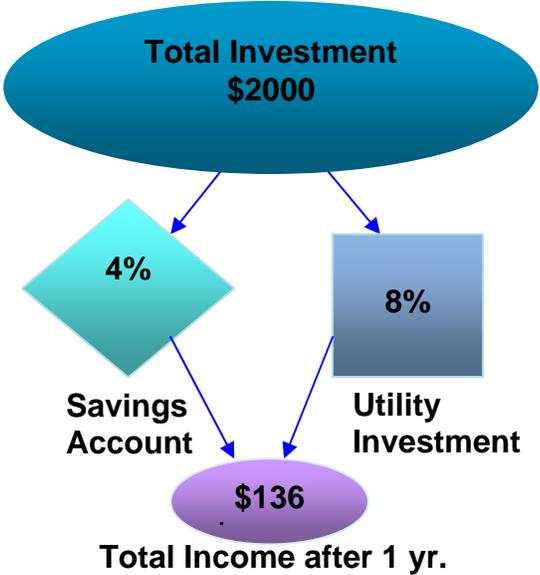


Instructions	Example
<p>1. Carefully read the problem, noting what numerical data is given, and what is being asked.</p>	<p>A high school student invested <b>\$2000</b> of summer income to save for college. A portion was deposited in a savings account that earned only <b>4%</b>. The rest was invested in a local electrical utility and earned <b>8%</b>. The total income for one year was <b>\$136</b>. How much did the student put in the savings account?</p>
<p>2. Make a sketch, drawing, or picture of the described situation, and put all the given data from the problem on the drawing. Look for what the problem's question is. In other words, what do they want to know?  <b>Let <math>x</math> = the amount put in the savings account.</b></p>	
<p>Write down any numerical relationships that the problem gives you. In this case, one pile of cash earns 4% interest and the other earns 8% interest.</p>	<p><math>X</math> = amt. put in savings account, so  <math>2000 - X</math> = amt. invested in utility.  <math>X</math> earns 4% interest, while  <math>2000 - X</math> earns 8% interest.  Total earnings is \$136.</p>

<p>3. Look for other information (numbers, formulas, etc.) that you can use to relate all the items.</p>	<p style="text-align: center;"><b><i>Interest Earned =</i></b>  <b><i>Principal • Interest Rate • Time</i></b>  <b><math>I = Prt</math></b>          (“Principal” is the amount invested.)</p>
<p>4. Use that formula, along with the given values and unknowns, to write an equation for the total interest earned.  <i>*Note that you will use the <math>I=Prt</math> formula twice since you have two principal amounts and two interest rates.</i></p>	<p>The total interest income (\$136) equals the interest earned from the savings account plus the earnings from the utility investment.</p> $I_{\text{total}} = I_{\text{savings}} + I_{\text{utility}}$ <p><i>Remember: Always use the decimal equivalents of interest rate percentages! Also, when time (t) is 1 year, as in this problem, you do not need to write it in the equation.</i></p> <p><math>I_{\text{savings}} = 0.04x</math> and  <math>I_{\text{utility}} = 0.08(200 - x)</math>, so</p> $136 = 0.04x + 0.08(200 - x)$
<p>5. <b>Solve for x:</b>          Distribute 0.08 within the parentheses; then, combine like terms and isolate X on one side of the equation. Finally, divide both sides by -0.04.</p>	$136 = 0.04x + 0.08(200 - x)$ $136 = 0.04x + 160 - 0.08x$ $136 - 160 = -0.04x + 160 - 160$ $-24 = -0.04x$ $x = 600$
<p><b>Answer: <math>X = 600</math>, so the student put \$600 into the savings account.</b></p> <p><b><i>Can you determine how much the student invested in the utility?</i></b></p> <p><b><i>How much interest did the student earn on the savings account alone? On just the utility investment?</i></b></p>	