Suppose you invest $4000 in two accounts paying 3% and 5% annual interest, respectively. If the total interest earned for the year was $180, how much was invested at each rate?

**SOLUTION:**

Let $x$ be the amount of money invested at a rate of 3%. The TOTAL amount of money you invested in BOTH accounts is $4000. So if you put $x$ amount of money in the account with a rate of 3%, then all the money that’s left went into the account with a rate of 5%. If you have $4000 total, and if you already used $x$ of it, then the amount of money left is $4000 - x$. So $x$ dollars went into the 3% account, and $(4000 - x)$ dollars went into the 5% account.

The interest earned in an account is the interest rate multiplied by the amount of money in the account. Since there are $x$ dollars in the 3% account, then the interest from that account is:

$$0.03x$$

(Remember to convert percents to decimals!!)

Since there are $(4000 - x)$ dollars in the 5% account, then the interest from that account is:

$$0.05(4000 - x)$$

The TOTAL interest is the sum of these two interest amounts, and we’re told it’s equal to $180. So we have:

$$0.03x + 0.05(4000 - x) = 180$$

$$0.03x + 200 - 0.05x = 180$$

$$-0.02x = -20$$

$$x = 1000$$

So $x = 1000$ dollars, which means $1000 was invested in the account with a 3% rate. The rest of it, which is $4000 - 1000 = 3000$ dollars, was invested in the account with a 5% rate.

<table>
<thead>
<tr>
<th>$1000$ invested at 3%</th>
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<tr>
<td>$3000$ invested at 5%</td>
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