

Average Annual Growth Rate Example 121

Problem: \$1850 is put into an account. After one year the fund has fallen in value by 6% to \$1739, but after another year the fund has grown from there by an amazing 78% to \$3095.42. What is the average annual growth rate for this fund, during this two-year period? (Round intermediate results to 4 decimal places.)

Solution: Since $1 + (-0.06) = 0.94$, and $1 + 0.78 = 1.78$, the average annual growth rate is $\sqrt[2]{0.94 \times 1.78} - 1 = \sqrt[2]{1.6732} - 1 = 1.2935 - 1 = 0.2935 = 29.35\%$.

Check: $\$1850 \times 1.2935 = \2392.96 , and $\$2392.96 \times 1.2935 = \3095.29 .

Note: In this problem you were given the beginning value, the ending value, and the two growth rates. However, usually you will be given only one pair or the other. Notice that we did not even use the information about the beginning value and ending value in our solution.

Notice that we did not simply take the average (that is, the arithmetic mean) of the two growth rates (-6% and 78%) which would have been 36%.

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