MINI-QUIZ 2

Your sister owes you $500. She doesn’t have the money today, however she offers you two options:

1. She will pay you $600 in two years
2. She will pay you $250 in one year and $300 in two years

Which option do you choose? Why?

I forgot to mention that the interest rate is 5%.

1. Solution

There are two ways to solve the problem, you could either convert both payment schedules to the current present value, or you could convert the first payment in the second option to a future value.

1.1. Convert both schedules to PV. Option 1 is a future payment of $600 in two years. The present value of this is given by

\[
P V = \frac{F V}{(1 + r) t} = \frac{600}{(1 + 0.05)^2} = 544.22
\]

Option 2 is a future payment of $250 in one year and $300 in two years. The present value of these payments are given by

\[
P V = \frac{F V}{(1 + r) t} = \frac{250}{(1.05)^1} + \frac{300}{(1.05)^2} = 238.10 + 272.10 = 510.20
\]

So we would pick option 1.

1.2. Convert the first payment in option 2 of $250 to a future value of \( t=2 \) (which is 1 year forward).

\[
F V = P V (1 + r)^t = 250(1.05)^1 = 262.50
\]

So the time 2 value of option 1 is $600, and the time 2 value of option 1 is $562.50. so again we would pick option 1.

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