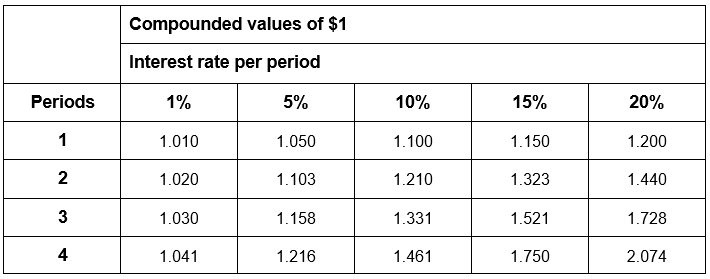
 Sample question solutions

F4 Investments

Solutions for questions from the F2 Investments unit of work.

1. Table of compounded values of



An amount of is invested and compounded annually at . Use the table of compounded values of above to find the value of the investment after three years.

Solution: Value of investment after three years

1. A principal of is to be invested for three years. Determine which of the following is the best investment option:

* p.a. simple interest,
* p.a. compounded annually, or
* p.a. compounded half-yearly.

Solution*:* Calculate the future value of each investment:

Option 1: p.a. simple interest.

Option 2: p.a. compounded annually.

Option 3: p.a. compounded half-yearly.

The best investment is p.a. compounded half-yearly.

1. Grandparents wish to save for their grandchild’s university expenses, and to have this amount available in eight years’ time. Calculate the single sum they need to invest at pa compounded annually.

Solution*:* When , and

The grandparents would have to invest a single lump sum of in order to save for their grandchild’s university expenses.

1. Determine the single sum to be deposited if is required in five years’ time and a rate of pa, compounded quarterly, is available.

Solution:

When , (5 yrs quarters ) and ( pa quarters )

would need to be invested in order for it to grow to a future value of .

1. A principal of is invested for three years at an interest rate of pa compounded half-yearly. Determine how much needs to be invested to achieve the same interest if the interest rate was pa compounded monthly.

Solution:

When , (3 years ) and ( pa )

When , (3 years months ) and ( pa months)

would need to be invested in order to achieve the same result.

1. A loaf of bread currently costs . Calculate its cost in 4 years if the inflation rate is p.a.

Solution:

1. The current price of a bag of rice is . Calculate its price 10 years ago if the average inflation rate over this time was .

Solution:

1. A family currently pays for some groceries. Assuming a constant annual inflation rate of , calculate how much would be paid for the same groceries in 5 years’ time.

Solution:

1. It is predicted that a particular painting will be appreciated at a rate of per annum. Calculate its predicted value in 2020 if it was purchased in 2010 for .

Solution: When , and

The predicted value in is .