

# What Is The Present Value Of \$25,000 Due 9 Periods From Now, Discounted At 10%? (Round Answer To 2 Decimal

## What Is The Present Value Of \$25,000 Due 9 Periods From Now, Discounted At 10%?

**(Round Answer To 2 Decimal** is a common question in finance, especially when evaluating the worth of future cash flows. Understanding how to calculate present value (PV) is essential for investors, financial analysts, and anyone involved in financial decision-making. In this article, we will explore the concept of present value, demonstrate how to compute it for a specific case, and discuss its practical applications in financial planning and analysis.

## Understanding the Concept of Present Value

### What Is Present Value?

Present value is the current worth of a future sum of money, discounted at a specific interest rate. It reflects the principle that money available today is worth more than the same amount in the future due to its potential earning capacity. This concept is fundamental in finance, underpinning valuations, investment decisions, and cost-benefit analyses.

### Why Is Present Value Important?

- Time Value of Money: Recognizes that money can earn interest over time.
- Investment Evaluation: Helps determine whether future cash flows justify an investment today.
- Comparing Alternatives: Allows for consistent comparison of different cash flow streams occurring at various times.

## Calculating Present Value: The Basic Formula

The standard formula for calculating the present value of a future sum is:

$$PV = \frac{FV}{(1 + r)^n}$$

Where:

- $PV$  = Present Value
- $FV$  = Future Value (the amount due in the future)
- $r$  = Discount rate per period
- $n$  = Number of periods until the payment

This formula discounts the future value back to the present by accounting for the interest rate over the periods.

# Applying the Formula to the Case: \$25,000 Due 9 Periods From Now at 10%

Let's analyze the specific question: What is the present value of \$25,000 due 9 periods from now, discounted at 10%?

## Step-by-Step Calculation

Given:

- $FV = \$25,000$
- $r = 10\% = 0.10$
- $n = 9$

Plug into the formula:

$$PV = \frac{\$25,000}{(1 + 0.10)^9}$$

Calculate the denominator:

$$(1 + 0.10)^9 = (1.10)^9$$

Using a calculator:

$$(1.10)^9 \approx 2.357947691$$

Now, divide:

$$PV = \frac{\$25,000}{2.357947691}$$

$$PV \approx \$10,605.76$$

Rounded to two decimal places, the present value is approximately \$10,605.76.

## Understanding the Results and Practical Implications

### Why Is the Present Value Approximately \$10,605.76?

The calculation indicates that receiving \$25,000 nine periods from now is equivalent to having about \$10,605.76 today, assuming a 10% discount rate. This reflects the opportunity cost of waiting and the time value of money, accounting for interest that could have been earned over the period.

## Implications for Financial Decision-Making

- Investment Choices: If an investment promises \$25,000 after 9 periods, and your required rate of return is 10%, then the current worth of that investment is roughly \$10,605.76.
- Valuation of Future Payments: Businesses can use this calculation to value future receivables or payables.
- Loan and Mortgage Calculations: Understanding PV helps in designing loan repayment schedules and mortgage plans.

## Additional Factors to Consider

### Changes in Discount Rate

The present value is highly sensitive to the discount rate:

- Higher rates decrease PV.
- Lower rates increase PV.

For example, if the discount rate were 8% instead of 10%, the PV would be higher.

### Different Payment Timelines

While this example considers a single future payment, real-world scenarios often involve multiple payments or cash flows spread over time. Calculating PV in such cases involves summing the present values of all individual cash flows.

### Other Discounting Methods

Beyond the standard formula, more complex models like net present value (NPV) calculations can incorporate varying rates, inflation, or risk factors, providing a more comprehensive valuation.

## Conclusion

Calculating the present value of a future sum is a fundamental skill in finance, enabling better decision-making and valuation. For the specific case of \$25,000 due 9 periods from now at a 10% discount rate, the present value is approximately \$10,605.76 when rounded to two decimal places. Understanding and applying this concept helps investors and financial professionals assess the worth of future cash flows in today's terms, facilitating smarter investments and financial planning.

Remember: Always consider the context and assumptions behind discount rates and cash flow timings when performing present value calculations, as these factors significantly influence the valuation outcome.

## Frequently Asked Questions

**What is the present value of \$25,000 due 9 periods from now, discounted at 10%?**

\$11,531.78

**How do you calculate the present value of a future sum of \$25,000 due in 9 periods at a 10% discount rate?**

Use the present value formula  $PV = FV / (1 + r)^n$ , so  $PV = 25,000 / (1 + 0.10)^9 \approx \$11,531.78$ .

**What is the formula for calculating present value when discounting future cash flows?**

$PV = FV / (1 + r)^n$ , where FV is future value, r is the discount rate, and n is the number of periods.

**If the future value is \$25,000 due in 9 periods and the discount rate is 10%, what is the present value approximately?**

Approximately \$11,531.78.

**Why do we discount future cash flows to their present value?**

Because of the time value of money, which states that a dollar today is worth more than a dollar in the future due to potential earning capacity.

**What is the effect of increasing the discount rate on the present value of \$25,000 due 9 periods from now?**

Increasing the discount rate decreases the present value.

**How does the number of periods affect the present value of a future sum?**

The longer the period, the lower the present value, due to exponential discounting.

**Can the present value be higher than the future value? Why or why not?**

No, because discounting reduces the future value to its present worth, which is always less than or equal to the future value.

## What tools or software can be used to calculate the present value of a future sum?

Financial calculators, spreadsheet software like Excel (using the PV function), and online present value calculators.

## What is the rounded present value of \$25,000 due 9 periods from now at 10% discount rate?

\$11,531.78

## Additional Resources

What Is The Present Value Of \$25,000 Due 9 Periods From Now, Discounted At 10%? (Round Answer To 2 Decimal)

Understanding the concept of present value of a future sum is fundamental in finance and investment analysis. When you are faced with a sum of money that is due at some point in the future, determining its present value helps you understand how much that future amount is worth today, considering a specific discount rate. In this guide, we will explore how to calculate the present value of \$25,000 due 9 periods from now, discounted at an annual rate of 10%. Whether you're a student, investor, or financial professional, this comprehensive explanation will clarify the steps involved and provide you with the tools to perform similar calculations confidently.

---

### What Is Present Value?

Before diving into the calculation, it's important to understand what present value (PV) means. Present value refers to the current worth of a future sum of money or stream of cash flows given a specified rate of return. Because money has the potential to grow over time through investments, a dollar today is worth more than a dollar in the future, due to factors like inflation and opportunity cost.

### Why Is Present Value Important?

- Investment decisions: Determines how much future cash flows are worth today.
- Valuation: Helps in valuing bonds, annuities, or projects.
- Financial planning: Assists in planning for future expenses or income streams.

---

### The Core Concept: Discounting Future Values

The process of calculating present value involves discounting the future sum by an appropriate rate. The basic formula for the present value of a lump sum is:

$$PV = \frac{FV}{(1 + r)^n}$$

\]

Where:

- FV = Future Value (the amount due in the future)
- r = discount rate per period (expressed as a decimal)
- n = number of periods until the payment

In this context:

- FV = \$25,000
- r = 10% = 0.10
- n = 9 periods

---

## Step-by-Step Calculation of Present Value

Let's go through the calculation step-by-step:

### 1. Identify the Variables

| Variable              | Value       | Explanation                       |
|-----------------------|-------------|-----------------------------------|
| Future Value (FV)     | \$25,000    | The amount due 9 periods from now |
| Discount Rate (r)     | 10% or 0.10 | Annual discount rate              |
| Number of Periods (n) | 9           | Number of periods until payment   |

### 2. Apply the Discounting Formula

Plugging the values into the formula:

$$PV = \frac{25,000}{(1 + 0.10)^9}$$

### 3. Calculate the Denominator

Calculate  $(1 + 0.10)^9$ :

$$(1.10)^9$$

Using a calculator or exponentiation function:

$$(1.10)^9 \approx 2.357947691$$

### 4. Final Calculation

Divide the future value by this factor:

$$PV = \frac{25,000}{2.357947691} \approx 10,605.01$$

## 5. Round to Two Decimal Places

The calculated present value is approximately \$10,605.01.

---

## Interpretation of the Result

The present value of \$25,000 due 9 periods from now, discounted at 10%, is approximately \$10,605.01. This means that if you had \$10,605.01 today and invested it at an annual rate of 10%, compounded annually, it would grow to about \$25,000 in 9 years.

---

## Additional Considerations

While the above calculation assumes annual compounding, it's important to note that different compounding periods can affect the present value.

### Variations to Consider:

- Different compounding frequencies: semi-annual, quarterly, monthly, or continuous.
- Changing discount rates: inflation or market conditions may alter the rate.
- Inflation adjustment: real vs. nominal present value calculations.

---

## Practical Applications

Understanding how to compute the present value of future cash flows is crucial in various real-world contexts:

- Bond valuation: determining what a future payment is worth today.
- Loan amortization: calculating the current value of future payments.
- Business valuation: estimating the worth of future earnings or cash flows.
- Investment analysis: comparing potential investments with different cash flow timings.

---

## Summary of Key Steps

To summarize, here are the essential steps involved in calculating the present value of a future sum:

1. Identify the future value (FV).
2. Determine the appropriate discount rate (r).
3. Determine the number of periods until payment (n).
4. Apply the present value formula:

$$PV = \frac{FV}{(1 + r)^n}$$

5. Calculate the denominator (growth factor).
6. Divide the future value by this factor to find the present value.
7. Round the answer to two decimal places for precision.

---

### Final Thoughts

Calculating the present value of a sum due in the future is a foundational skill in finance, helping you compare cash flows occurring at different times and make informed decisions. For the specific case of \$25,000 due 9 periods from now, discounted at 10%, the present value is approximately \$10,605.01. This figure effectively captures the current worth of that future payment, considering the time value of money.

By mastering this calculation, you can better evaluate investment opportunities, understand the value of future cash flows, and develop sound financial strategies. Remember, the key is understanding the variables involved and carefully applying the formula to obtain accurate, meaningful results.

---

Disclaimer: The calculation assumes annual compounding and a constant discount rate. Adjustments may be necessary for different compounding periods or changing rates.

## **What Is The Present Value Of 25 000 Due 9 Periods From Now Discounted At 10 Round Answer To 2 Decimal**

What Is The Present Value Of 25 000 Due 9 Periods From Now Discounted At 10 Round Answer To 2 Decimal

### **Related Articles**

- [Which Two Methods Help To Prevent The Disruption Of Network Services? \(Choose Two.\)\\*using VLANs To Segment](#)
- [The Dihedral Group Dn Of Order 2n \(n ≥ 3\) Has A Subgroup Of N Rotations And A Subgroup Of Order 2. Explain](#)
- [Suppose A Gardener Produces Both Tomatoes And Squash In His Garden. If He Must Give Up 8 Bushels Of Squash](#)

[Back to Home](#)