Interest Cost Calculator Worksheet

> **Instructions:** This worksheet will help you calculate and understand the true cost of borrowing money. Fill in the required information for each loan example and follow the formulas to determine monthly payments and total interest costs.

Basic Interest Calculation

For simple interest over one year:

```
Interest = Principal × Interest Rate
```

Practice Problems

Problem	Principal	Interest Rate	Calculation	Interest Amount
1	$1,000	5%		
2	$5,000	7%		
3	$10,000	3.5%		

Example

If you borrow $2,000 at 6% simple interest for one year:

Interest = $2,000 × 0.06 = $120

Total amount to repay = $2,000 + $120 = $2,120

Installment Loan Calculator

For loans with fixed payments over a specific term (like car loans, mortgages):

```
Monthly Payment = P × r × (1 + r)^n / [(1 + r)^n - 1]
```

Where:

- P = Principal (loan amount)
- r = Monthly interest rate (annual rate divided by 12)
- n = Total number of payments (years × 12)

Loan Scenario Analysis

Scenario	Loan Amount	Annual Interest Rate	Loan Term	Monthly Payment	Total Interest Paid
Car Loan A	$20,000	4.5%	5 years		
Car Loan B	$20,000	4.5%	3 years		
Car Loan C	$20,000	7%	5 years		

Formula for total interest paid:

```
Total Interest = (Monthly Payment × Number of Payments) - Principal
```

Analysis Questions

1. How much more interest would you pay with Car Loan A compared to Car Loan B?

2. How much more would your monthly payment be with Car Loan B compared to Car Loan A?

3. What is the difference in total interest between Car Loan A and Car Loan C?

4. What would be your recommendation for someone looking to minimize overall borrowing costs?

Credit Card Interest Calculator

For revolving credit with minimum payments:

```
Minimum Payment = Percentage of Balance (typically 2-3%) or fixed amount (whichever is greater)
```

Credit Card Scenarios

Calculate how long it would take to pay off these credit card balances making only minimum payments (assume 2% of balance or $25, whichever is greater):

Scenario	Initial Balance	APR	Initial Minimum Payment	Time to Pay Off	Total Interest Paid
Credit Card A	$5,000	18%			
Credit Card B (Fixed payment)	$5,000	18%	$200/month		
Credit Card C	$5,000	24%			

Analysis Questions

1. How much less interest would you pay with Credit Card B (fixed payment) compared to Credit Card A (minimum payments)?

   _____

2. How much sooner would you pay off Credit Card B compared to Credit Card A?

   _____

3. What is the effect of the higher interest rate on Credit Card C compared to Credit Card A?

   _____

4. What strategies would you recommend to someone with credit card debt?

   _____

Credit Card Calculation Example

For a $1,000 balance at 18% APR with 2% minimum payment:

- Month 1: Minimum payment = $25 (greater of 2% of $1,000 or $25)
- Interest for month 1 = $1,000 × (18% ÷ 12) = $15
- Principal reduction = $25 - $15 = $10

- New balance = $1,000 - $10 = $990
- Month 2: Minimum payment = $25 (greater of 2% of $990 or $25)
- Interest for month 2 = $990 × (18% ÷ 12) = $14.85
- And so on...

Payment Strategy Comparison

Compare different payment strategies for a $10,000 loan at 6% for 5 years:

Strategy	Standard Monthly	Bi-weekly Payments	Monthly + $100 Extra
Monthly Payment			
Total Payments			
Time to Pay Off			
Total Interest			
Interest Saved	N/A		
Time Saved	N/A		

Reflection Questions

1. Which payment strategy would you choose and why?

   _____

2. What are the trade-offs between the different strategies?

   _____

3. How might your choice of payment strategy depend on your other financial goals?

   _____

Real Life Application

Think about a major purchase you might make in the future that would require borrowing (education, car, house, etc.):

Type of purchase:	
Estimated cost:	
Down payment amount:	
Amount to borrow:	
Likely interest rate:	
Loan term (years):	
Estimated monthly payment:	
Total interest you would pay:	
Total cost (purchase + interest):	
Payment strategy I would use:	
How I would ensure I could afford this:	

> **Remember:** Understanding the true cost of borrowing helps you make informed financial decisions. Always calculate the total cost including interest before taking on any debt, and consider strategies to minimize these costs.