Why is the “cheap” phone plan expensive?

Debt as compound interest in reverse; the monthly rate on a card; how the size of the payment sets the months and the interest; the minimum-payment trap; comparing loans by APR and total cost; real card and payday rates; when a loan pays for itself.

1 Interest in reverse

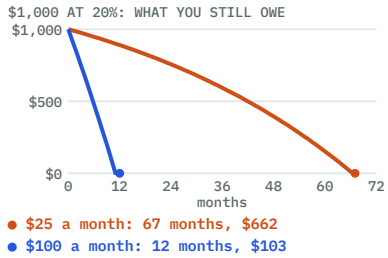
the price of borrowing

- **Interest**: the extra paid back for money borrowed now · **APR** (annual percentage rate): “the yearly price of a loan, as a percent of what you borrowed”
- Simple: $1,000 at 20% for 1 year → 20% of $1,000 = **$200**
- **Credit card**: pay for things today, pay the bank back later → unpaid part = a loan · interest each month at `APR ÷ 12`, added to the debt → interest on interest **against** you (Lesson 2 in reverse)
- $600 at 24% → 2% a month → **$12** · pay $30 → $30 − $12 = $18 off → owe **$582**
- Pay = interest ($12) → debt **never** falls · pay less → debt **grows**

2 Payment → months

the payoff chart

- $1,000 at 20%: **$25** a month → **67 months** (≈ 5½ years), **$662** interest · $50 → 25 months, $227 · **$100** → **12 months**, **$103**
- Payment × 4 → interest ≈ ÷ 6 → shorter debt ⇒ fewer months of interest
- $1,200 at 24%: $120 → 12 months, $152 · $30 → **82 months**, **$1,238** interest > the $1,200 borrowed (month 1: $24 of $30 is interest)



3 The trap

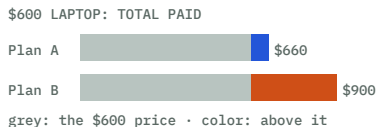
low minimum payment

- **Minimum payment**: “the smallest amount the lender lets you pay each month; the rest of the debt keeps growing at the full rate”
- Low minimum → small part cuts the debt → debt stays big longer → interest month after month → big total ⇒ good for the **lender** (who lent the money)
- **Present bias** (Behavioral Lesson 6): too much weight on now → “$0 today, $25 a month” feels small
- Pay later, pay in four, installments, “no money down” = **loans** with a friendlier name

4 Compare loans

APR + total cost

- **Total cost** = `monthly × months` · compare APR and total, never the monthly amount alone
- $1,000 phone: PLAN A $89 × 12, APR 12% → ≈ **$1,070** · PLAN B $39 × 36, APR 24% → ≈ **$1,400**
- $600 laptop: $55 × 12 = **$660** (APR ≈ 18%) · $25 × 36 = **$900** (≈ 29%) → $60 vs $300 above the price = **5 ×**



5 The evidence

real rates, US

- Federal Reserve (US central bank), G.19 Consumer Credit (money people owe): card accounts charged interest ≈ **22% a year**, late 2025 → $1,000 for a year ≈ $220 · an average: rates differ by person and card
- **Payday loan**: small loan due next payday (≈ 2 weeks) · CFPB (Consumer Financial Protection Bureau, US agency that oversees loans): $15 per $100 → `15% × 26` = 390% ≈ **almost 400%** a year, if renewed (new loan + new fee pays the old) · $10 per $100 → ≈ 260%

6 Worth it?

return vs cost

- **Return versus cost**: “a loan makes sense, in money terms, only when what it buys earns more than the loan costs”
- PASSES $1,000 at 5% ($50 a year) → course +$150 a year · $800 at 20% ($160) → tools earn $400
- FAILS phone upgrade, trip, concert, sneakers → earn $0 · training +$200 vs $3,000 at 8% = $240 → at 5% ($150) it passes
- Degree, sometimes a house → Lessons 4 and 10

Watch out: lower monthly payment ≠ cheaper → often a longer or more expensive loan · and $600 ÷ $12 = 50 months forgets interest: $12 a month on $600 at 2% never ends

This is a lesson, not financial advice. It shows what the evidence says about choices like these; what is right for you depends on your life.