

Monthly Payment 101



While spending only \$2,000 to take home a brand new Toyota Camry may sound like a lot of fun, paying on that loan for 72 months may not be. In the United States, the commentary after our last economic collapse was that Americans tend to buy things out of their reach. Homes, cars, televisions, you name it, we buy it. Perhaps shortsighted buyers expect a promotion that never comes or are on the receiving end of an unforeseen accident or illness. Nonetheless understanding budgets and monthly payments is an essential component of an individual's financial literacy.

In this assignment, you will use a slightly intimidating looking equation: $P = \frac{Cr(1+r)^N}{(1+r)^N - 1}$ where...

P = monthly payment, C = loan amount, N = the number of months and
 r = monthly interest rate (a 7.5% annual rate would be converted to a decimal and divided by 12; .075/12 so 0.00625)

You will need to plug values into the formula and use the order of operations to calculate the monthly payments for the situations below. You'll also determine the total amount of money the individual ends up spending on monthly payments. The difference between this amount and the original price tag is the *interest* on the loan. Help these individuals figure out if the monthly payment fits in their budget and is worth it to them in the long run.



Jessica is considering borrowing \$ 15,000 for a new Ford Fusion if...

the monthly payment is less than \$ 250 and
 the total cost is less than \$ 16,000

Equation Space:

1. Based on your calculations, does the monthly payment fit into Jessica's budget?

2. How much interest is Jessica going to owe? Will it put her over her goal of \$16,000?

3. Would you recommend this loan for her? Why or why not?

Huffington Bank Loan Offer	
Loan Amount (c)	\$ 15,000
Annual Interest Rate	6.0%
Monthly Interest Rate (r)	.005
Number of Months (n)	72
Monthly Payments (P) will be... \$	248.59

Long Term Cost	
Number of Months (n)	72
Monthly Payments (P)	248.59
Total Cost (nP)	17,898.48
Interest ($nP - c$)	\$ 2,898.48

Name

Date

Period

Jessica

$$P = \frac{Cr(1+r)^N}{(1+r)^N - 1} = \frac{15000(.005)(1+.005)^{72}}{(1+.005)^{72} - 1}$$

P = payment

C = Loan Amount

N = # of months

r = Monthly interest rate (take annual rate and $\div 12$)

G
←

MD
→

AS
→

$$= \frac{15000(.005)(1.005)^{72}}{(1.005)^{72} - 1}$$

$$= \frac{107.40332}{0.432044} =$$

$$\boxed{248.59}$$

★ Please don't round too soon!

Take out to 5-6 decimal points.

In calculator:

→ Do exponents first (after adding $(1+r)$), then multiply (numerator)

or

Subtract (denominator).

→ Then divide numerator
denominator