

Let's take a look at what happens with the payment in the second month. When you get to the second month, you will owe the bank (slightly) less money. Because of this, they will take (slightly) less interest from your second month's payments.

Example 4

Adrian bought a house for \$308 000. She made a \$50 000 down payment, and then borrowed the remainder from her bank at 5.25% interest over 25 years.

- a) Calculate her monthly payment if the amortization rate for her mortgage is \$5.96 per \$1000 borrowed.

$$\text{mortgage} = \text{Purchased price} - \text{Down payment} \\ = 308\,000 - 50\,000 = \$258\,000$$

$$\text{monthly payment} = \text{Amortization rate} \times \text{mortgage} \\ = \frac{5.96}{1000} \times 258\,000 = \$1537.68$$

- b) Use the table below to help you determine how much she still owes the bank after her second payment is made.

Monthly Payment	Interest	Principal Paid	Unpaid Balance	Equity
			\$258 000	\$50 000
① \$1537.68	\$1128.75	\$408.93	257 591.07	50 408.93
② \$1537.68	1126.96	410.72	257 180.35	50 819.65

① Interest = $258\,000 \times \left(\frac{5.25}{100}\right) \times \left(\frac{1}{12}\right) = \1128.75

① Principal = $1537.68 - 1128.75 = \$408.93$

① Unpaid Balance = Unpaid Balance - Principal paid $\Rightarrow 258\,000 - 408.93 = 257\,591.07$

① Equity = Equity + Principal = $50\,000 + 408.93 = 50\,408.93$

She still owes the bank:

<p>② Interest = $257\,591.07 \times \left(\frac{5.25}{100}\right) \times \left(\frac{1}{12}\right) = 1126.96$</p> <p>② Principal = $1537.68 - 1126.96 = 410.72$</p> <p>③ Unpaid Balance = $257\,591.07 - 410.72 = 257\,180.35$</p>	<p>Equity = $50\,408.93 + 410.72$</p> <hr style="border: 0; border-top: 1px solid black; margin: 5px 0;"/> <p>50 819.65</p>
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If you would like to see the declining interest in more detail over the life of a mortgage, you could watch the video here:

<http://waecmathfaq.wordpress.com/essential-math/essential-math-40s/home-finance/mortgage-schedule-exploration/>