

Mortgage Payment Practice Problems

Key

1. Calculate the monthly payment for a mortgage of \$120 000, amortized over 15 years at a rate of 4% interest per year. Use an amortization table to find the loan amount per \$1000 of mortgage. (June 2013)

$$\frac{120000}{1000} \times 7.38 = \underline{\$885.60} \text{ per month.}$$

2. A portion of Joe's monthly mortgage payment goes towards interest. Joe wonders how much interest he will pay over the life of the mortgage. Explain how Joe can calculate this amount. (June 2013)

• monthly payment \times number of payments
• subtract mortgage amount.

3. Determine the monthly payment for a mortgage of \$235 000 at an interest rate of 4% for a period of 25 years. Use an amortization table. (Jan 2014)

$$\frac{235000}{1000} \times 5.26 = \underline{\$1236.10} \text{ per month}$$

4. Chris buys a house in Carman for \$225 000. The bank offers him a mortgage interest rate of 4.75% amortized over 25 years.

Chris makes a 10% down payment. Calculate the monthly mortgage payment. (Jan 2015)

$$\begin{aligned} & \times 225000 = \$22500 \text{ down payment.} \\ \$225000 - \$22500 &= \underline{\$202500} \text{ mortgage.} \end{aligned}$$

$$\frac{202500}{1000} \times 5.67 = \underline{\underline{\$1148.18}} \text{ per month.}$$

table value
\$5.67
per \$1000.

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5. State 2 ways to reduce the interest paid over the life of a mortgage. (June 2015)

• shorter amortization period. at 20 vs 25 years.
 • make an extra payment every year!
 (lowers remaining principal).

6. Sacha recently purchased a new house with a 20-year mortgage of \$174 000. Her monthly mortgage payment is \$1096.20.

- a) State the total amount that Sacha will have repaid to the bank at the end of the mortgage.

$$\$1096.20 \times 12 \times 20 = \$263088$$

paid back

- b) State the total amount of money paid in interest to the bank over the life of the mortgage. (June 2015)

$$\$263088 - 174000 = \$89088$$

interest

7. Bilal purchased a home for \$350 000 and made a minimum down payment of 5%. He obtained a mortgage at an interest rate of 4% over 25 years. The amortization rate is \$5.26 per thousand dollars borrowed.

Calculate the monthly mortgage payment.

oops! $\frac{350000}{1000} \times 5.26 = \1841.00 ~~$\$1748.95$~~

5% down payment $\frac{332500}{1000} \times 5.26 = \1748.95 Correct

$\frac{350000}{1000} \times 0.05 = 17500$ ←
 $\frac{332500}{1000}$ borrowed.

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8. Jing-Wei is purchasing a home for \$310 000 and will make a down payment of 5%. She will finance the mortgage over 25 years.

- a) Calculate the amount borrowed for the mortgage.

$$310\,000 \times 0.95 = \$294\,500$$

shortcut borrowed.

- b) Calculate the monthly mortgage payment if it costs \$5.26 per month for each \$1000 borrowed.

$$\frac{294\,500}{1000} \times 5.26 = \underline{\underline{\$1549.07}}$$

- c) Calculate the cost of financing (interest) paid on the 25-year mortgage. (June 2018)

$$\begin{array}{r} \$1549.07 \times 12 \times 25 = 464\,721 \\ - 294\,500 \\ \hline \underline{\underline{\$170,221}} \end{array}$$

9. David took out a mortgage of \$259 000 for a new house. He has arranged financing for 4% over 20 years. (June 2016)

Calculate the interest on the first month's payment.

$$\begin{array}{l} 259\,000 \times 0.04 \times (1/12) \\ = \underline{\underline{\$863.33}} \text{ interest} \end{array}$$

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10. Adele is buying a house for \$275 000. She makes a \$55 000 down payment. She obtains a mortgage for the remaining amount. The amortization rate is \$6.44 per thousand dollars borrowed (based on an interest rate of 4.75% for 20 years).

a) Calculate the monthly mortgage payment.

$$275,000 - 55,000 = \$220,000 \text{ borrowed}$$

$$\frac{220,000}{1,000} \times 6.44 = \underline{\underline{\$1,416.80}}$$

b) Calculate the total amount paid for the house after the 20 years, including the down payment. (Jan 2019)

$$1,416.80 \times 12 \times 20 = \$340,032 \text{ paid}$$

$$+ 55,000 \text{ down payment}$$

$$\underline{\underline{\$395,032 \text{ in total}}}$$

11. Calculate the missing values in the following amortization table.

Month	Monthly Mortgage Payment	Interest	Principal	Unpaid Balance
March	\$1034.00	\$711.68	(2) \$322.32	\$189 423.00
April	\$1034.00	\$710.34	323.66	\$189 099.34
May	\$1034.00	\$709.12	\$324.88	188774.46 (3)

(1) stays the same

$$(2) \$1034 - 710.34 = 323.66$$

$$(3) 189099.34 + 324.88 = 188774.46$$