

Section 7.4 The Conditions of a Mortgage

1. Kassim and Neela have a pre-approved mortgage for \$325 000. The current annual interest rate for a five-year fixed term mortgage is 5.25%.
 - a) Determine the monthly payment for a 25-year amortization period.
 - b) Calculate the total amount paid for the mortgage.
 - c) Determine the monthly payment for a 20-year amortization period.
 - d) How much more is the monthly payment?
 - e) Calculate the total amount paid for the mortgage.
 - f) How much more will Kassim and Neela pay by choosing a 25-year amortization period?
2. Janesha bought a house for \$279 900 and made a down payment of \$52 000. The annual interest rate for a five-year fixed term mortgage is 5.0%.
 - a) Determine the amount to be mortgaged.
 - b) Determine the monthly payment for a 25-year amortization period.
 - c) Determine the monthly payment for a 20-year amortization period.
 - d) How much less will Janesha pay by choosing the 20-year amortization period?
3. Mai Yu can afford to pay approximately \$1500 per month on her mortgage. Determine the payment amount for each payment frequency.
 - a) accelerated weekly
 - b) weekly
 - c) accelerated bi-weekly
 - d) bi-weekly
 - e) semi-monthly
4. Calculate the amount paid in one year for each payment frequency in question 3.
5. Colleen and Ryan bought a two-bedroom townhouse for \$135 900.
 - a) Use a spreadsheet or other technology to determine the monthly payment for a three-year fixed term mortgage with an annual interest rate of 6.25% and a 25-year amortization period.
 - b) Use a spreadsheet or other technology to determine how long it will take to pay off the mortgage with monthly payments of
 - i) \$800
 - ii) \$900
 - c) Graph the data for parts a) and b) on the same set of axes. Plot Years on the horizontal axis and Remaining Amount Owing on the vertical axis.
6. Randy and Rowena have a \$186 900 mortgage at 5.75% per year on their two-bedroom condominium.
 - a) Determine the bi-weekly payment on a mortgage amortized over 25 years.
 - b) Use the **ΣPrn** function on your graphing calculator to determine the principal paid over the first five years of the mortgage.



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7. Johan makes accelerated weekly mortgage payments of \$425.35 every Monday.

a) Determine the amount paid in each month.

i)

APRIL						
S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

ii)

MAY						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

iii)

JUNE						
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

b) How much less would he pay over the three months if he made the \$425.35 payments bi-weekly?

8. Tanya and Yanni have a \$155 000 mortgage at 4.25% per year.

a) Determine the monthly payment for a 20-year amortization period.

b) They decide to make weekly payments of \$500. Determine the number of years it will take to pay the mortgage in full.

c) How much interest will they save by making weekly payments of \$600?

9. A \$250 000 mortgage is amortized over 25 years at 4.65% per year.

a) Use technology to determine the monthly and semi-monthly payments.

b) Compare the total amount paid for each payment frequency.

c) Approximately how long would it take to pay the mortgage in full by paying weekly payments of \$500? Provide a TVM Solver screen to show the settings you used.

10. Massimo can afford a maximum of \$2500 per month for mortgage payments.

a) Given an annual interest rate of 4.45%, determine the maximum mortgage that he can afford for each amortization period, to the nearest dollar.

i) 15 years

ii) 20 years

iii) 25 years

b) Why might someone choose a longer amortization period when it results in paying more interest?

11. Tranh and Linh have a mortgage of \$300 000 at 4.25% per year amortized over 25 years. On the first anniversary of their mortgage, they make a payment equal to 10% of the balance, which is applied entirely to the principal.

a) Determine their monthly payment.

b) Determine the amount of the 10% payment. (Hint: Use an amortization table.)

c) Why would banks limit the lump-sum payment to only 10% of the outstanding mortgage balance each year?

