

Practice Problems

CATEGORY: HP12c

TOPIC: CALCULATE MORTGAGE PAYMENT AND ANNUAL DEBT SERVICE

Problem 1 – Calculate the periodic mortgage payment and the annual debt service given the following terms.

Mortgage amount	\$400,000
Annual interest rate for mortgage	7.25%
Loan term	30 years
Amortization/compounding	Monthly

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Loan term	30 years
Amortization/compounding	Monthly

Problem Solution

KEYSTROKES	DISPLAY	COMMENTS
f CLX	0.00	Clear calculator registers
400000 PV	400,000.00	Enters loan amount into PV register
30 g n	360.00	Multiplies number of years by 12 and enters number of periods (months) into n register
7.25 g i	0.60	Divides annual interest rate by 12 and enters periodic interest rate into i register
PMT	-2,728.71	Calculates periodic (monthly) payment
12 x	-32,744.46	Multiplies periodic (monthly) payment by 12 and shows annual debt service

The monthly mortgage payment for the loan is \$2,728.71

The annual debt service for the loan is \$32,744.46

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Problem 2 – Calculate the periodic mortgage payment and the annual debt service given the following terms.

Mortgage amount	\$850,000
Annual interest rate for mortgage	6.4%
Loan term	20 years
Amortization/compounding	Quarterly

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Problem 2 – Calculate the periodic mortgage payment and the annual debt service given the following terms.

Mortgage amount	\$850,000
Annual interest rate for mortgage	6.4%
Loan term	20 years
Amortization/compounding	Quarterly

Problem Solution

KEYSTROKES	DISPLAY	COMMENTS
f CLX	0.00	Clear calculator registers
850000 PV	850,000.00	Enters loan amount into PV register
6.4 ENTER	6.40	Enters annual interest rate
4 ÷ i	1.60	Divides annual interest rate by 4 and enters periodic (quarterly) interest rate into i register
20 ENTER	20.00	Enters number of years
4 x n	80.00	Converts number of years to number of quarters and places value in to n register
PMT	-18,911.71	Calculates periodic (quarterly) payment
4 x	-75,646.83	Multiplies periodic (quarterly) payment by 4 and shows annual debt service

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Problem 3 – Calculate the periodic mortgage payment and the annual debt service given the following terms.

Mortgage amount	\$1,500,000
Annual interest rate for mortgage	5.9%
Loan term	20 years
Amortization/compounding	Semi-Monthly

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Problem 3 – Calculate the periodic mortgage payment and the annual debt service given the following terms.

Mortgage amount	\$1,500,000
Annual interest rate for mortgage	5.9%
Loan term	20 years
Amortization/compounding	Semi-Monthly

Problem Solution

KEYSTROKES	DISPLAY	COMMENTS
f CLX	0.00	Clear calculator registers
2E+06 PV	1,500,000.00	Enters loan amount into PV register
5.9 ENTER	5.90	Enters annual interest rate
24 ÷ i	0.25	Divides annual interest rate by 24 and enters periodic (semi-monthly) interest rate into i register
20 ENTER	20.00	Enters number of years
24 x n	480.00	Converts number of years to number of number of periods and places value in to n register
PMT	-5,326.63	Calculates periodic (quarterly) payment
24 x	-127,839.19	Multiplies periodic (semi-monthly) payment by 24 and shows annual debt service

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Problem 4 – Calculate the periodic mortgage payment and the annual debt service given the following terms.

Mortgage amount	\$350,000
Annual interest rate for mortgage	4.75%
Loan term	15 years
Amortization/compounding	Annually

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Problem 4 – Calculate the periodic mortgage payment and the annual debt service given the following terms.

Mortgage amount	\$350,000
Annual interest rate for mortgage	4.75%
Loan term	15 years
Amortization/compounding	Annually

Problem Solution

KEYSTROKES	DISPLAY	COMMENTS
f CLX	0.00	Clear calculator registers
350000 PV	350,000.00	Enters loan amount into PV register
15 n	15.00	Multiplies number of years by 12 and enters number of periods (months) into n register
4.75 i	4.75	Divides annual interest rate by 12 and enters periodic interest rate into i register
PMT	-33,152.40	Calculates periodic (annual) payment which is also the annual debt service