

# Problem 2

On January 1, 20X5, Diego Garcia borrowed \$300,000 to purchase a new office building. The loan is to be repaid in 2 equal annual payments, beginning December 31, 20X5. The annual interest rate on the loan is 6%.

- a) Calculate the annual payment on the loan.
- b) Prepare the appropriate journal entries to record the loan and subsequent payments at the end of 20X5 and 20X6.
- c) If the loan was to be repaid in 24 equal monthly payments (0.5% interest rate per month), how much would the monthly payment equal?

## Worksheet 2

a)

$$\text{Loan Amount} = \text{Payments} \times \text{Annuity Present Value Factor}$$

b)

GENERAL JOURNAL			
Date	Accounts	Debit	Credit
1-Jan	Building	300,000.00	
	Note Payable		300,000.00
	<i>To record purchase of office building for 6% note payable</i>		
31-Dec	Interest Expense		
	Note Payable		
	Cash		
	<i>To record payment</i>		
31-Dec	Interest Expense		
	Note Payable		
	Cash		
	<i>To record payment</i>		

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c)

$$\text{Loan Amount} = \text{Payments} \times \text{Annuity Present Value Factor}$$

## Solution 2

a)

$$\text{Loan Amount} = \text{Payments} \times \text{Annuity Present Value Factor}$$

$$\$300,000 = \text{Payments} \times \text{Annuity Present Value Factor (2 periods @ 6\%)}$$

$$\$300,000 = \text{Payments} \times 1.83339$$

$$\$300,000 / 1.83339 = \text{Payments}$$

$$\text{Payments} = \$163,631.31$$

b)

GENERAL JOURNAL			
Date	Accounts	Debit	Credit
1-Jan	Building	300,000.00	
	Note Payable		300,000.00
	<i>To record purchase of office building for 9% note payable</i>		
31-Dec	Interest Expense	18,000.00	
	Note Payable	145,631.31	
	Cash		163,631.31
	<i>To record payment (\$300,000 X 6% = \$18,000)</i>		
31-Dec	Interest Expense	9,262.61	
	Note Payable	154,368.69	
	Cash		163,631.31
	<i>To record payment ((\\$300,000 - \\$154,368.69) X 6% ≈ \$9,262.61)</i>		

c)

$$\text{Loan Amount} = \text{Payments} \times \text{Annuity Present Value Factor}$$

$$\$300,000 = \text{Payments} \times \text{Annuity Present Value Factor (24 periods @ 0.50\%)}$$

$$\$300,000 = \text{Payments} \times 22.56287$$

$$\$300,000/22.56287 = \text{Payments}$$

$$\text{Payments} = \$13,296.18$$

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