QUESTION

4. You take out a personal loan from the bank for $15,000 to pay for unexpected roof repairs. The bank requires repayment in equal monthly installments over a period of 3 years at a fixed APR of 7.5%.
a. Determine the monthly payment.

Answer

Monthly payment formula :
$A = P(r(1+r)^n)/((1+r)^n-1)$

A = $469.28 , the monthly payment for 3 years

Explanation

let
P = $15000, principal amount
r = 7.5% per year/ 12 months or **0.00625**, interest rate
n = 12 months x 3 years = **36 total periods**

Required
A = Monthly payment for 3 years

Solution

$A = P(r(1+r)^n)/((1+r)^n-1)$
$= 15000(0.00625(1+0.00625)^{36}/(1+0.00625)^{36} - 1$
$= 117.32/0.25$
A = $469.28 the monthly payment for 3 years