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UNIT 8 MCR 3UI Exam Review

Josh decided to buy a new vehicle for $60000. He makes a down payment of $5000, the rest he finances at 2.9%/a compounded bi-weekly for 5 years.

↳ annuity

a) How much does he finance?

$60\,000 - 5000$

$= 55\,000$

b) Determine the value of his bi-weekly payments.

P R R R ...

55000

$$P = \frac{R[1-(1+i)^{-n}]}{i}$$

$$R = \frac{Pi}{[1-(1+i)^{-n}]}$$

$i = \frac{0.029}{26}$

$n = 5 \times 26$

$= 130$

$$R = \frac{55000 \times 0.029 \div 26}{[1-(1+0.029 \div 26)^{-130}]}$$

$R \doteq 454.73$

c) What is the total interest paid?

$454.73 \times 130 - 55000$

$= 4114.90$

$(1+i)^{365} = (1+0.029\div 26)^{26}$

d) If the interest rate was compounded daily, but Josh still made bi-weekly payments, would he pay more or less total interest?

More interest because interest is building on the interest more frequently.

e) If the interest rate stayed at 2.9%/a compounded bi-weekly but Josh made weekly payments, would he pay more or less total interest?

Less interest since the balance is lower each time interest is calculated.