

Unit 8 Lesson 5 Paying Off Simple Interest Loans

Objective: To compute the final payment when paying off a simple interest installment loan.

Final Payment on a simple interest installment loan = the previous balance + the current month's interest.

If you pay the loan off early you will save interest that you would pay if you kept the loan through the entire term.

Important Formulas

Interest = Principal x Rate ÷ 12 (Since it is only for 1 month)

Final Payment = Previous Balance + Current Month's Interest

Interest Saved = Total Payback - (Sum of previous payments + Final Payment)

Total Payback = # Months in whole loan x Monthly payment

Sum of Previous Payments = Monthly Payment x # payments already paid

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$$1.) \quad \$800 \times 15\% \div 12 = \boxed{\$10.00 - \text{Interest}}$$

$$\quad \quad \quad \$800 + \$10 = \boxed{\$810.00 - \text{Final Payment}}$$

$$2.) \quad \$816.04 \times 12\% \div 12 = \boxed{\$8.16 - \text{Interest}}$$

$$\quad \quad \quad \$816.04 + \$8.16 = \boxed{\$824.20 - \text{Final Payment}}$$

$$3.) \quad \begin{array}{r} \text{Total Payback} \\ (12 \times \$106.56) \\ \$1,278.72 \end{array} - \begin{array}{r} \text{Already paid} \\ (4 \times 106.56) \\ \$1,250.24 \end{array} = \begin{array}{r} \text{Final payment} \\ 824.20 \\ \boxed{\$28.28} \end{array}$$

- 4 x 106.56 - 824.20

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Example: The balance on a simple interest loan is \$3,600. The annual interest rate is 8%. What is the next interest? What is the final payment?

$$\begin{aligned} \$3600 \times 8\% \div 12 &= \$24.00 \text{ - next interest} \\ \$3600 + 24 &= \boxed{\$3,624.00} \text{ Final Payment} \end{aligned}$$

Example: Eleanor Wojek took out a simple interest loan of \$1,525 at 8% for 6 months. Her monthly payment on the loan is \$260.17. After 3 payments the balance is \$769.98. If she pays off the loan when the next payment is due, what is the final payment? How much is saved by paying off the loan early?

$$\begin{aligned} I &= \$769.98 \times 8\% \div 12 = \$5.13 \\ \text{Final Pay} &= \$769.98 + 5.13 = \boxed{\$775.11} \\ \text{Amt Saved} &= (\$260.17 \times 6) - \$260.17 \times 3 - 775.11 \\ &= \$1561.02 - 780.51 - 775.11 = \boxed{\$5.40} \end{aligned}$$

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Example: Art Senn obtained a simple interest installment loan for \$6,370 at 17% for 12 months. His monthly payment on the loan is \$580.94. After 9 payments the balance is \$1,695.01. If he pays off the loan when the next payment is due, what is the final payment? How much is saved by paying off the loan early?

$$\begin{aligned} I &= \$1,695.01 \times 17\% \div 12 = \$24.01 \\ \text{Final Pay} &= \$24.01 + 1,695.01 = \boxed{\$1,719.02} \\ \text{Saved} &= \$580.94 \times 12 - \$580.94 \times 9 - 1,719.02 \\ &= \$6,971.28 - 5,228.46 - 1,719.02 = \boxed{\$23.80} \end{aligned}$$