

* Amortising Loans & Tables.

This is a loan repaid until the balance is zero.

The steps can be shown in a table, called an Amortisation table.

	Payment Number	Payment Amount	Interest Amount	Principal Reduction	Balance
start	0	0	0	0	Principal
	1	Remains the Same	= rate, per period × Previous Balance	= Payment - Interest	= Previous Balance - Principal Reduction

For Alyssa's loan.

Payment Number	Payment Amount	Interest Amount	Principal Reduction	Balance
0	0	0	0	1000
1	257.85	1.25% × 1000 = \$12.50	257.85 - 12.50 = 245.35	1000 - 245.35 = 754.65
2	257.85	1.25% × 754.65 = \$9.43	257.85 - 9.43 = 248.42	754.65 - 248.42 = 506.23
3	257.85	1.25% × 506.23 = 6.33	257.85 - 6.33 = 251.52	506.23 - 251.52 = 254.71
4	257.85 ↑ 257.89	1.25% × 254.71 = 3.18	257.85 - 3.18 254.67 257.89 - 3.18 254.71	254.71 - 254.71 = 0

↖ Adjust last payment so that the loan is paid out.

Otherwise there will be a balance of 4 cents.

Leave out, pencil numbers.

Example 5 Pg 313

Eg A business borrows \$10,000 at a rate of 8% p.a. The loan is repaid making four Quarterly payments, of 2626.20.

The amortisation table for this loan is

Payment Number	Payment	Interest	Principal Reduction	Balance
0	0	0	0	10,000
1	2626.20	200.00	2426.20	7573.80
2	2626.20	151.48	2474.72	5099.08
3	2626.20	101.98	2524.22	2574.86
4	2626.36	51.50	2574.86	0
Total	10504.96	504.96	10,000	

a) Complete the amortisation table.

b) What is the total cost of repaying the loan?

c) What is the total interest paid?

Solⁿ

$$a) 8\% \text{ p.a.} = \frac{8}{4} = 2\% \text{ per Quarter.}$$

$$\text{Line of Payment 1 - Interest} = \frac{2}{100} \times 10,000 \\ = \$200$$

$$\text{Line of Payment 2 - Principal reduction} = 2626.20 - 151.48 \\ = 2474.72$$

$$\begin{aligned} \text{Line of Payment 3 - Balance} &= 5099.08 - 2524.22 \\ &= 2574.86 \end{aligned}$$

$$b) \text{ Total Cost} = \text{Sum of repayments} = \$10504.96$$

$$c) \text{ Total Interest Paid} = \text{Sum of Interest column} = \$504.96$$

OR.

$$\begin{aligned} \text{Total Cost} - \text{Principal} &= 10504.96 - 10000 \\ &= \$504.96 \end{aligned}$$

Questions:- Exercises 9A + 9B on workplan.

2020 COVID

Ex 9B Q 6 + 7.