 Year 12 Mathematics Standard 1

Assessment task – buying a car – example

Part A – Purchasing the car

Section 1 – research the car

| Features | Student response |
| --- | --- |
| Make/model | Volkswagen Golf |
| Picture | Picture of a 2007 model of a Volkswagen Golf. |
| Website link | [2007 Volkswagen Golf R32 V Auto 4MOTION MY08](https://www.carsales.com.au/private/details/Volkswagen-Golf-2007/SSE-AD-4627353/?Cr=1)https://www.carsales.com.au/private/details/Volkswagen-Golf-2007/SSE-AD-4627353/?Cr=1 |
| Price | $15,000 |

Section 2 – investigating bank websites

| Details | Bank 1 | Bank 2 |
| --- | --- | --- |
| Name of bank or financial institution | ANZ | Commonwealth Bank |
| Loan calculator website (URL) | [ANZ Personal Loan Repayment Calculator](https://www.anz.com.au/personal/personal-loans/calculators-tools/repayments/)https://www.anz.com.au/personal/personal-loans/calculators-tools/repayments/ | [Commonwealth Bank Personal Loan Repayments Calculator](https://www.commbank.com.au/digital/calculators/personal-loan-repayment-calculator/)https://www.commbank.com.au/digital/calculators/personal-loan-repayment-calculator/ |
| Interest rate | 10.99% | 8.49% |
| Monthly repayments | 3 years – $669.595 years – $448.01 | 3 years – $473.005 years – $308.00 |

Section 3 – using a spreadsheet to calculate loan repayments

* [Example of Reducing Balance Loan Spreadsheet](https://docs.google.com/spreadsheets/d/1D6TT6uDV-sZV52L1AkbzN6hM2CPmycfZO0_zLl3cMPM/edit#gid=0)

Section 4 – interpreting the spreadsheet

| Questions | Answers |
| --- | --- |
| After half of the term of your 3 year loan, how much is owing? | $7983.73 |
| After how many months is approximately half of the principal of the loan still owing on the 5 year loan? | 33 months |
| How much is paid in total after your 3 year loan? | $$473×36=\$17028$$ |
| How much is paid in total after your 5 year loan? | $$308×60=18480$$ |
| Which would you prefer to take out? A 5 year loan or a 3 year loan? Why? | I would prefer the 3 year loan as I pay less for the loan. |

Part B – extra costs

Section 1 – Registration and insurance

| Expenses | Costs |
| --- | --- |
| Registration fee | $65 |
| Motor vehicle tax | $207 |
| Original yellow – tran fee | $45 |
| Stamp duty | $450 |
| Compulsory third party insurance | NRMA – $603.74QBE – $601.44 |
| Comprehensive car insurance | NRMA – $2743.25GIO – $1558.41 |
| Total extra costs | $2926.85 |

Section 2 – credit card and interest charges

| Charges | Credit card 1 (Commonwealth Bank) | Credit card 2 (ANZ) |
| --- | --- | --- |
| Annual interest rate | 19.74% | 19.74% |
| Interest free period | Up to 55 days interest free | Up to 44 days interest free |
| Account keeping fee | $29 | $30 |
| Daily interest rate (as a decimal) | $$0.00054082\cdots $$ | $$0.00054080\cdots $$ |

Preferred choice – I would choose the Commonwealth Bank credit card as it has more interest free days and a cheaper annual fee.

Section 3 – using a spreadsheet to calculate interest charges

* [Example of Credit Card Interest Calculator Spreadsheet](https://docs.google.com/spreadsheets/d/1Sxd0z_UyOMUC6sGUxZtVved4IW5LtPwFqS7xRhY7uqY/edit?usp=sharing)

Section 4 – interpreting the spreadsheet

| Questions | Answers |
| --- | --- |
| Amount owing after 180 days | $3226.02 |
| Interest charged for the first 180 days | $299.17 |
| Amount owing after 1 year (365 days) | $3565.39 |