FNSACC313

Perform financial calculations.

ASSESSOR GUIDE

Assessment 1 of 2

Short Answer Questions and Mathematical Calculations

SWINBURNE OPEN EDUCATION

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Assessment Instructions

Overview

To be assessed as competent for this unit of competency, you must demonstrate your skills and knowledge to use a range of routine calculation methods and techniques when performing routine calculations and checking calculation outcomes.

This assessment is divided into ten (10) knowledge-based questions and mathematical calculations. Read each question carefully before typing your response into the spaces provided.

Additional resources and supporting documents.

To complete this assessment, you will need access to:

- A computer with internet and email access and a working web browser
- Moneysmart GST Calculator
- https://www.webmath.com
- Financial Mentor Compound Interest Calculator
- Bank of Melbourne Online Calculator

MS Excel computer software

Handheld calculator

Submission requirements

To be eligible to be deemed competent in this assessment, you are required to complete and submit this assessment document. Word documents will not be accepted. Please save any Word documents as PDF files before submitting.

Most modern web browsers can open and display a PDF file. However, if you have an older operating system, you may need a PDF reader installed on your device, such as the Acrobat Reader, available from Adobe.

Windows: Word 2013 and newer
Choose File > Export > Create PDF/XPS.

Windows: Word 2010
1. Click the File tab
2. Click Save As. To see the Save As dialogue box in Word 2013 and Word 2016, you have to choose a location and folder
3. In the File Name box, enter a name for the file, if you haven't already
4. In the Save as type list, click PDF (*.pdf).
    - If you want the file to open in the selected format after saving, select the Open file after publishing check box.
    - If the document requires high print quality, click Standard (publishing online and printing).
    - If the file size is more important than print quality, click Minimum size (publishing online).
5. Click Options to set the page to be printed, to choose whether markup should be printed, and to select output options. Click OK when finished.
6. Click Save.

macOS: Office for Mac
To save your file as a PDF in Office for Mac, follow these easy steps:
1. Click the File
2. Click Save As
3. Click File Format towards the bottom of the window
4. Select PDF from the list of available file formats

5. Give your file a name if it doesn't already have one, then click Export

For more detailed instructions, refer to Microsoft Support.

Assessment Information

Submission

You are entitled to three (3) attempts to complete this assessment satisfactorily. Incomplete assessments will not be marked and will count as one of your three attempts.

All questions must be responded to correctly to be assessed as satisfactory for this assessment.

Answers must be typed into the space provided and submitted electronically via the LMS. Hand-written assessments will not be accepted unless previously arranged with your assessor.

Reasonable adjustment

Students may request a reasonable adjustment for assessment tasks.

Reasonable adjustment usually involves varying:

- the processes for conducting the assessment (e.g. allowing additional time)
- the evidence gathering techniques (e.g. oral rather than written questioning, use of a scribe, modifications to equipment)

However, the evidence collected must allow the student to demonstrate all requirements of the unit.

Refer to the Student Handbook or contact your Trainer for further information.

MARKING GUIDE

Q1. List and describe three (3) commonly found computational mathematical errors.

Students' responses will vary; however, students must list and describe three (3) computational errors such as those included in the example answer provided below. - Incorrect order of operations – for example, amounts in brackets are calculated first - Incorrect positioning of decimal points and brackets in equations – for example, the amount should have been 6.01, not 601 - Wrong computational sign – for example, should have divided, not subtracted or added - Wrong spreadsheet function or formula used - Input/transcription errors - Loss of constants

Q2. List and explain three (3) ways to check for computational errors.

Students' responses will vary; however, students must list and explain three (3) ways to check computational errors, such as those included in the example answer provided below. Use the opposing computational method to check for errors in calculations. To check additions, use subtraction, and to check subtraction, use addition. To check divisions, use multiplication and to check multiplication, use division. A formatted excel spreadsheet could also be used to check mental/manual calculations. If a mental calculation has been used – check by using a calculator.

Q3. This question has four (4) parts a, b, c, and d; each part has scenarios in separate tables.

The use of handheld calculators is required for all sections of the question.

a. **You are required to demonstrate your knowledge and skill to manually complete the calculations for Goods and Services Tax (GST)**

a	**Scenario 1 Goods and Services Tax**
	Sam buys an accounting reference book online. The book costs $55.00 + GST. There is no delivery fee on the book. Calculate the total price Sam will have to pay.
i.	Select the suitable method to perform the calculation to answer the question in the above scenario.
	Divide the cost by 10. Once the answer is achieved, use addition to combine the two amounts to ascertain the price Sam will need to pay. Or Multiply the cost by 10% and add the result to the price to attain the total price Sam will pay.
ii.	Describe the equipment you use to complete the calculation.
	Handheld calculator

iii.	List the steps used to complete the calculation and provide the correct answer
	$55.00 / 10% = $5.50 $55.00 + $5.50 = $60.50 Or $55.00 x 10% =$5.50 $55.00 + $5.50 = $60.50.

a	**Scenario 2 Goods and Services Tax**
	Andrew engages a lawyer to write an employment contract for two new employers. The cost of the work is $455.00 GST inclusive. Calculate the GST exclusive cost Andrew needs to pay. Round the cost to two decimal places.
i.	Select the suitable method to perform the calculations to answer the question in the scenario.
	Divide the total cost by 1.1 to attain the GST exclusive amount.
ii.	Describe the equipment you use to complete the calculations.
	Handheld calculator
iii.	List the steps used to complete the calculations and provide the correct answer
	$455.00 / 1.1 = $413.64

a	**Scenario 3 Goods and Services Tax**
	Jordan is buying a new calculator for work. The cost of the calculator is $75.00 + GST. Calculate the amount of GST Jordan will pay. Calculate the full cost to Jordan.
i.	Select the suitable method to perform the calculations to answer the question in the scenario.
	Divide the cost by 10 to reach the amount of GST and add the GST to cost Or Multiply the cost by 10% to reach the amount of GST and add the GST to the cost.
ii.	Describe the equipment you use to complete the calculations.
	Handheld calculator
iii.	List the steps used to complete the calculations and provide the correct answer
	$75.00 / 10 = $7.50 $75.00 + $7.50 = $82.50 Or $75.00 x 10% = $7.50 $75.00 + $7.50 = $82.50

b. **Complete the following table to demonstrate your knowledge and skill to manually complete the calculations for Simple Interest.**

b	Scenario 1 Simple Interest
	Taylor has $8,925.00 to invest for one (1) year, at an interest rate of 9%pa. How much will her investment be worth at the end of one year?
i.	Select the suitable calculation method to perform the calculation to answer the question in the scenario.
	The method required to complete the calculation is multiplication and addition. The original amount is multiplied by the interest rate as a percentage.
ii.	Describe the equipment you use to complete the calculations.
	Handheld calculator
iii.	List the steps used to complete the calculations and provide the correct answers.
	I = $8,925.00 x .09 I = $803.25 x 1 I = $8,925.00 + $803.25 I = $9,728.25

b.	Scenario 2 Simple interest
	You borrow $7,655.00 for one (1) year from ANZ to finance the purchase of a motorised scooter. The interest rate charged by ANZ is 7.5%p.a. What is the total amount you will have paid ANZ at the end of the loan term? Round answer to two decimal places.
i.	Select the suitable method to perform the calculations to answer the question in the scenario.
	The method required to complete the calculation is multiplication and addition.
ii.	Describe the equipment you use to complete the calculations.
	Handheld calculator
iii.	List the steps used to complete the calculations and provide the correct answers.
	I= P x r x t I= $7,655.00 x .075 I= $574.13 x 1 I= $7,655.00 + $574.13 I= $8,229.13

c. **Complete the following table to demonstrate your knowledge and skill to manually complete the calculations for Compound Interest.**

c	Scenario 1 Compound Interest
	Jo invests $5,000.00 for three years. It earns a compounding interest of 10%pa, compounding monthly. Calculate the future value of Jo's investment when it matures.
i.	Select the suitable method to perform the calculations to answer the question in the scenario.

	Compound interest is the theory of adding accumulated interest back onto the principal sum so that interest can be earned on top of interest from that moment. Interest can be calculated at the start or the end of the compounding period (month or year) when it comes to savings accounts. The method to complete the calculation is to multiply the original amount by the interest rate (pa) and divide it by 12 to attain the interest for one month.
ii.	Describe the equipment you use to complete the calculations.
	Handheld calculator
iii.	List the steps used to complete the calculations and provide the correct answers.
	A = P(1+r/n)^nt A = $ 5,000 (1 + 0.1 / 12) ^ (12*3) A = $ 5,000 (1 +.00833) ^ 36 A = $ 5,000 (1.0083) ^ 36 A = $ 6,740.91

c	Scenario 2 Compound Interest
	Taylor invests $3000 for five (5) years. It earns a compounding interest of 5%pa compounding quarterly. Calculate the total amount of interest Taylor earns when it matures. Calculate the future value of Taylor's investment when it matures.
iv.	Select the suitable method to perform the calculations to answer the question in the scenario.
	Compound interest is the theory of adding accumulated interest back onto the principal sum so that interest can be earned on top of interest from that moment. Interest can be calculated at the start or the end of the compounding period (month or year) when it comes to savings accounts. The method to complete the calculation is to multiply the original amount by the interest rate (pa) and divide it by 4 to attain the quarterly interest.
v.	Describe the equipment you use to complete the calculations.
	Handheld calculator
vi.	List the steps used to complete the calculations and provide the correct answers.
	A = P(1+r/n)^nt A = 3000 (1+r/4]^4t A = 3000{1 + 0.05/4) ^ 4x5 A = $3846.11 Interest = $846.11

d. **Complete the following table to demonstrate your knowledge and skill to manually complete the calculations for Basic Loan Calculations.**

d	Scenario 1 Basic Loan calculations
	Kim wants to buy a new car. The drive away cost of the car is $15,000.00. Kim has a deposit of $12,000.00 and will need to borrow the remaining $3,000.00. Kim's parents are prepared to lend her the funds at a simple interest rate of 5% over two (2) years. 1) Calculate the interest that the loan will accrue in the first year. 2) Calculate the amount of the monthly repayments. 3) Calculate the total amount that Kim will have repaid at the end of the loan term of 2 years.

i.	**Select the suitable method to perform the calculations to answer the question in the scenario.**
	The principle loan amount will be multiplied by the interest rate pa to get the annual interest cost. The annual Interest cost is multiplied by two (2) for the two (2) years of the loan. The total amount paid back is the initial principle with the addition of the two (2) years of interest.
ii.	**Describe the equipment you use to complete the calculations.**
	Handheld calculator
iii.	**List the steps used to complete the calculations and provide the correct answers.**
	1. $3,000.00 x 5%pa = $150.00 per year. 2. $3,000.00 + $300.00 divided by 24 monthly payments = $137.50pm 3. $3000 + $300 = $3300

d	**Scenario 2 Basic Loan calculations**
	Jordan is considering buying a unit. He has saved a $60,000 deposit and will need to borrow the remaining $200,000 from a lender. He is trying to decide between a 10-year loan with an 8% simple interest rate and a 20-year loan at a 6% simple interest rate. 1. Calculate the total amount of interest Jordan will repay at the end of: • 10 years on the 8% simple interest loan term • 20 years on the 6% simple interest loan term. 2. Calculate the amount of the monthly repayments for both options rounded to 2 decimal places.
iv.	Select the suitable method to perform the calculations to answer the question in the scenario.
	The principle loan amount will be multiplied by the interest rate pa to get the annual interest cost. The annual interest cost is multiplied by the number of years of the loan to calculate the total interest paid. The total amount paid back is the initial principle plus the total interest paid divided by the loan period expressed in months.
v.	Describe the equipment you use to complete the calculations.
	Handheld calculator
vi.	List the steps used to complete the calculations and provide the correct answers.
	Monthly loan repayments 10 years 8% simple interest 1. Total Interest = $200,000.00 x 8%pa x 10 = $160,000.00 2. Monthly repayment = $200,000.00 + $160,000.00 / 120 = $3000.00 pm Monthly loan repayments 20 years 6% simple interest 1. Total Interest = $200,000.00 x 6%pa x 20 = $240,000.00 2. Monthly repayment = $200,000.00 + $240,000.00 / 240 = $1833.33pm

Q4. List the three (3) key features of financial calculators.

Q4 Marking Guide Answer must include three (3) of the key features listed below. "N" key is used for a number of periods "I" key implies the periodic interest rate "PV" key stands for the Present Value "PMT" key is used to calculate the Payment "FV" key is used to calculate the Future Value

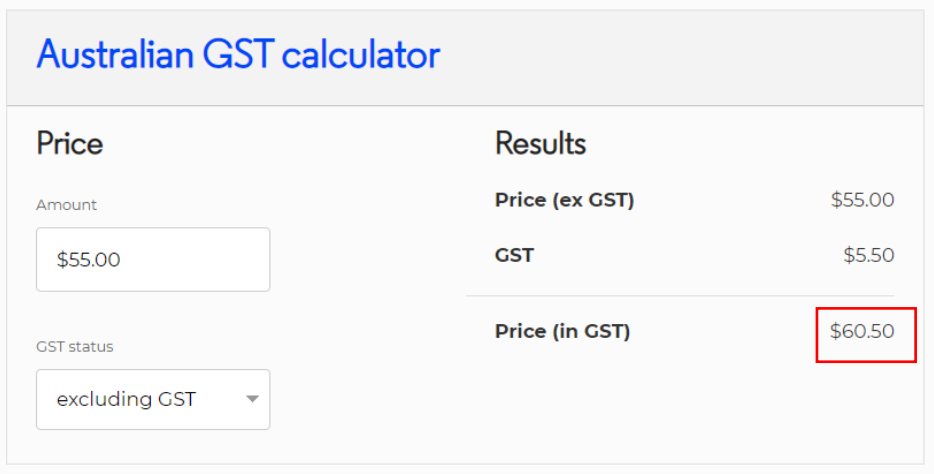
Q5. Confirming calculations using software systems.

To confirm your answers to Question 3a GST calculations.

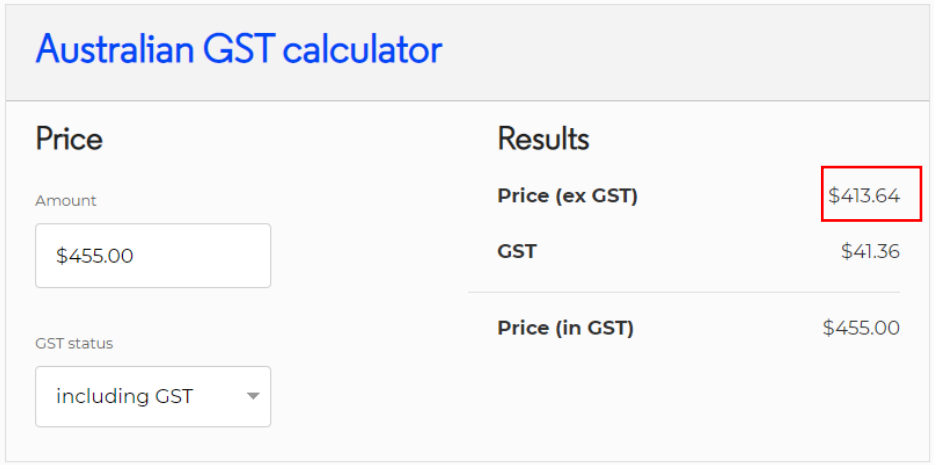
Use the following link to the Money Smart website enter the data provided in Question 3 a. Once the calculation is completed, take a screenshot of the result to demonstrate you have checked your results. Paste the screenshot below.

Money Smart GST calculations.

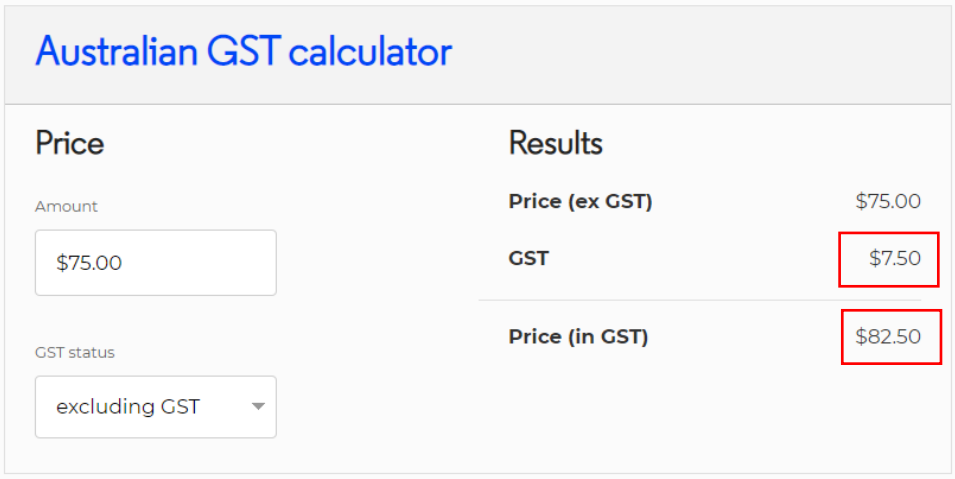
Scenario 1 Goods and Services Tax



Scenario 2 Goods and Services Tax



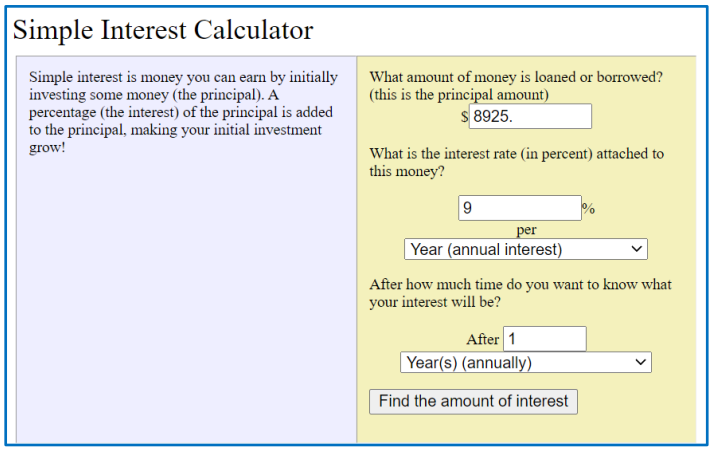
Scenario 3 Goods and Services Tax

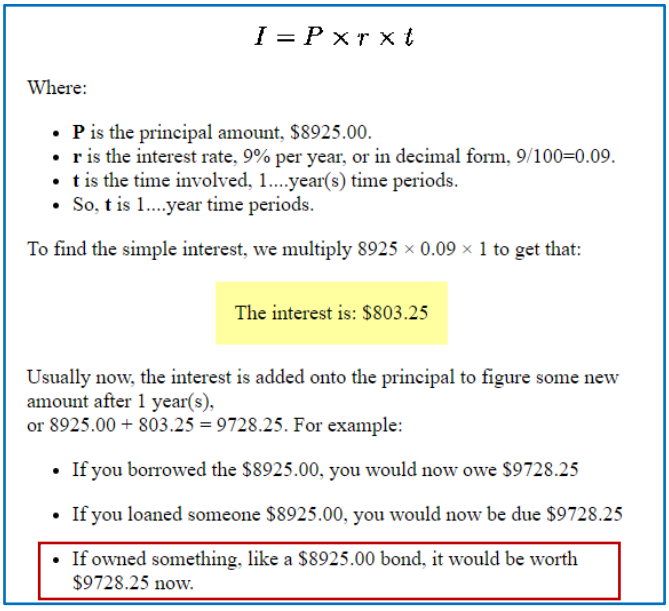


Q6. To confirm your answers to Question 3b, Simple Interest using software systems.

https://www.webmath.com/simpinterest.html

Scenario 1 Simple Interest





$$I = P \times r \times t$$

Where:

- **P** is the principal amount, $8925.00.
- **r** is the interest rate, 9% per year, or in decimal form, 9/100=0.09.
- **t** is the time involved, 1....year(s) time periods.
- So, **t** is 1....year time periods.

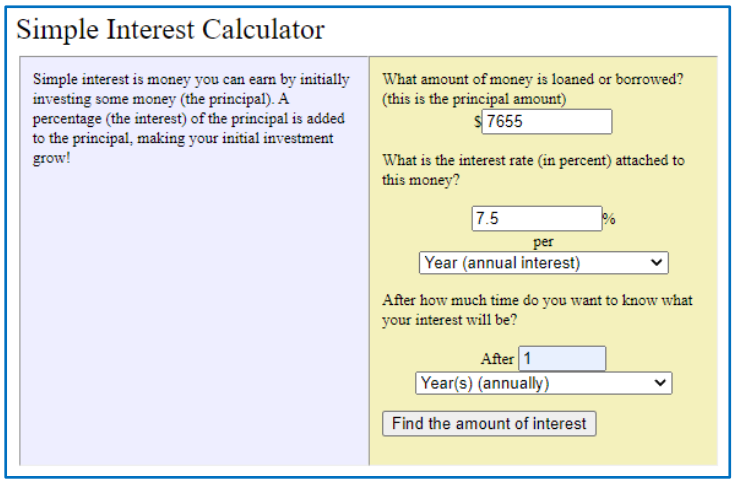
To find the simple interest, we multiply 8925 × 0.09 × 1 to get that:

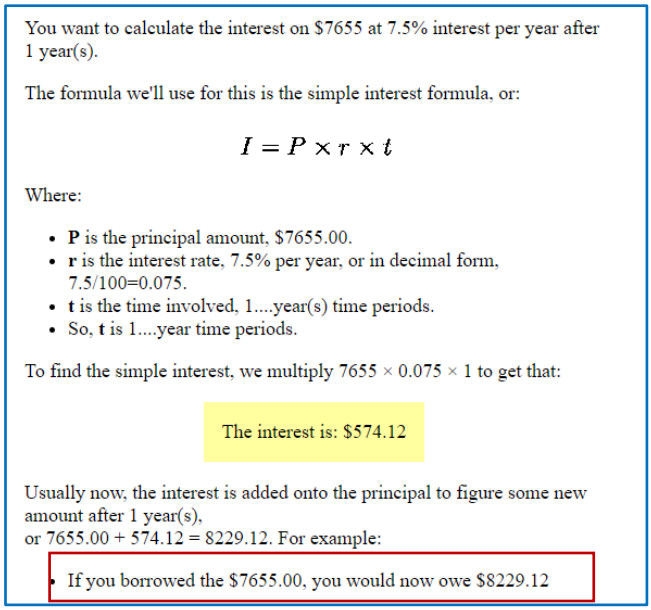
The interest is: $803.25

Usually now, the interest is added onto the principal to figure some new amount after 1 year(s),
or 8925.00 + 803.25 = 9728.25. For example:

- If you borrowed the $8925.00, you would now owe $9728.25
- If you loaned someone $8925.00, you would now be due $9728.25
- If owned something, like a $8925.00 bond, it would be worth $9728.25 now.

Scenario 2 Simple Interest

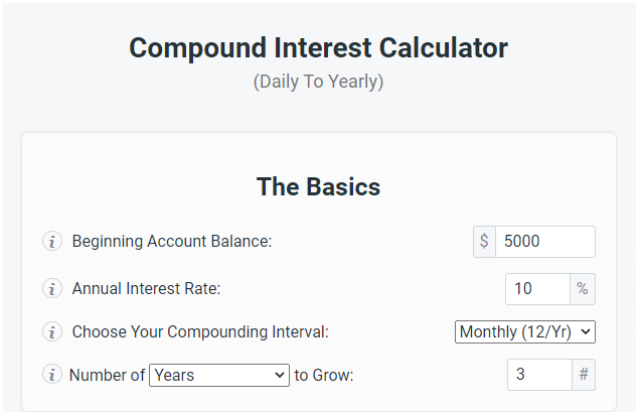


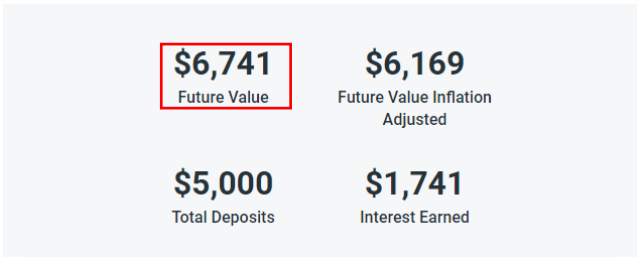


Q7. To confirm your answers to Question 3c, Compound interest calculations using software systems.

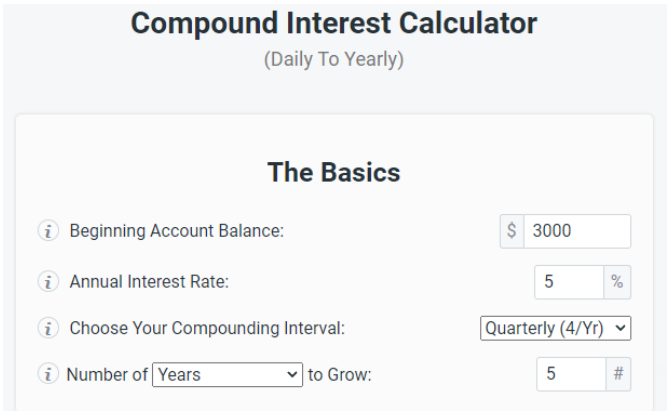
Compound Interest Calculator

Scenario 1 Compound Interest





Scenario 2 Compound Interest



Q8. Use the link to access the Bank of Melbourne online calculator using software systems.

a. Enter the following information into the loan calculator:

Loan Amount: $320,000.00

Loan Term: 30 years

Loan type: Variable

Interest Rate Loan 1: 3.64% p.a.

Interest Rate Loan 2: 3.65% p.a.

Upfront Fee: $1500.00

Monthly Fee: $10.00

Repayment Frequency: Monthly

Take a screen shot of the completed calculation and paste below.

Calculate the following using software systems:

b. Total interest charged on a 30-year loan with an interest rate of 3.64% pa
c. Total interest charged on a 30-year loan with an interest rate of 3.65% pa
d. Total repayment amount (interest + principal) on a 30-year loan with an interest rate of 3.64% pa
e. Total repayment amount (interest + principal) on a 30-year loan with an interest rate of 3.65% pa

Download a 'pdf' copy of the calculator summary, which shows the monthly loan repayments for both interest rates. Save it in a folder and upload it with your assessment.

Q8 Marking guide

The answer will be as per the Comparison Loan Calculator on the Bank of Melbourne website.

Total interest charged on 30-year loan at 3.64% interest rate = $211444.17
Total interest charged on 30-year loan at 3.65% interest rate = $212093.41
Total repayment amount for 30-year loan at 3.64% interest rate = $531444.17
Total repayment amount for 30-year loan at 3.65% interest rate = $532093.41
Loan calculator summary as at 29/06/2021

Common Loan Details
Loan Amount $320,000
Loan Term 30 years
Repayment: Monthly
Loan 1 Details
Loan Type :Variable
Interest Rate: 3.64% p.a.
Upfront Fee $1,500
Monthly Fee $10
Loan 2 Details
Loan Type: Variable
Interest Rate: 3.65% p.a.
Upfront Fee $1,500
Monthly Fee $10
Results
Loan 1 will save you : $649.24
Loan 1 Repayments: $1,462.07
Loan 2 Repayments: $1,463.87

Q9. Sam from National Investments has provided you with the following information on an investment option for a customer. Answer the two questions below.

Interest Rate: 7% pa each year

Starting Balance: $194,000.00

Period of Investment: 13 years

i. Using software systems, calculate how much interest would the customer accrue using simple interest after 13 years?

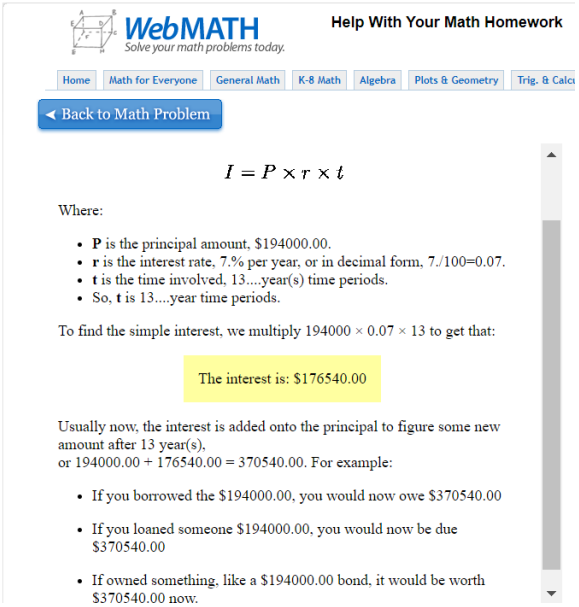
ii. Using software systems, calculate the balance of the investment after 13 years?

Q9 Marking guide

Students must select a software system to calculate the following answer.

Simple Interest: I = PRT
P = principle = $194,000.00
R = interest rate = 7% =.07
T = time = 13 years

Interest after 13 years: 194,000.00 × .07 × 13 = $176,540.00
Balance of investment after 13 years: $194,000.00 + $176,540.00 = $370,540.00



Q10 Explain your understanding of 3 key features of the online software utilised to check the financial calculations for questions 5 to 9 above.

Q10 Marking guide

Students' responses will vary; however, students must list three (3) key features of the online software they have used to check the financial calculations for questions 5 to 9. Benchmark answers are provided below.

	Key features of the online software used to check financial calculations
	Calculates the GST included in the cost of a GST inclusive amount. Calculates the amount of GST that needs to be added to a GST excluded amount.
	Calculates the future value of an investment paying simple interest Calculates the future value of an investment paying compound interest
	Calculates the amount of interest payable if the interest compounds daily, weekly, monthly, or quarterly over a loan term.

	Calculates and compares loan and investment scenarios

Congratulations, you have reached the end of Assessment 1!