FNSACC313 Perform financial calculations

Application
This unit describes the skills and knowledge required to use a range of routine calculation methods and techniques when performing routine financial calculations and checking calculation outcomes.

It applies to individuals who use literacy and numeracy skills to perform routine computational tasks as part of their operational job role.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Elements and Performance Criteria

<table>
<thead>
<tr>
<th>ELEMENT</th>
<th>PERFORMANCE CRITERIA</th>
<th>Page reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Obtain data and resources for financial calculations</td>
<td>1.1 Obtain input data and verify as required for workplace calculations</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td></td>
<td>1.2 Determine required outcomes of calculations and confirm from task specifications</td>
<td>Throughout learning guide</td>
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<tr>
<td></td>
<td>1.3 Acquire resources and equipment needed to perform calculations effectively</td>
<td>5–6, 14–34, 37–37, 52</td>
</tr>
<tr>
<td></td>
<td>1.4 Use simple spreadsheets where necessary to perform repeated calculations</td>
<td>14–34</td>
</tr>
<tr>
<td>2. Select suitable calculation methods and carry out financial calculations</td>
<td>2.1 Identify and obtain equipment required to perform calculations, including hand-held calculators</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td></td>
<td>2.2 Select method suitable for required calculations</td>
<td>Throughout learning guide</td>
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<tr>
<td></td>
<td>2.3 Perform financial calculations to complete work requirements using techniques suited to selected method</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td>3. Check calculations and record outcomes</td>
<td>3.1 Check results to confirm that calculations are accurate and meet required outcomes, and identify and correct routine computational errors</td>
<td>10, 38–40, 68</td>
</tr>
<tr>
<td></td>
<td>3.2 Record calculation results according to organisational requirements</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td></td>
<td>3.3 Store or electronically file calculation worksheets for future use according to organisational policy and procedures</td>
<td>26, 44–47</td>
</tr>
</tbody>
</table>
## Foundation Skills

*This section describes those language, literacy and numeracy and employment skills that are essential to performance.*

<table>
<thead>
<tr>
<th>Skill</th>
<th>Description</th>
<th>Page reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>• Interprets instructions and carefully analyses information for errors and discrepancies</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td>Writing</td>
<td>• Records information accurately using correct spelling, grammar and conventions</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td>Numeracy</td>
<td>• Performs mathematical calculations accurately, including addition, subtraction, multiplication, division, percentages, fractions, decimals and straight line graphs to undertake financial computations</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td>Navigate the world of work</td>
<td>• Follows organisational protocols, policies and procedures relevant to own role</td>
<td>5, 44–47</td>
</tr>
<tr>
<td>Get the work done</td>
<td>• Plans, organises and implements tasks according to organisational requirements</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td></td>
<td>• Uses the main features and functions of digital tools to complete work tasks</td>
<td>14–34</td>
</tr>
</tbody>
</table>
Assessment for this Unit

Assessment for this Unit includes:

- submitting completed exercises
- formal assessment after completing this learning guide.

A formal assessment is available for purchase by training organisations, trainers/assessors.

Assessment requirements v3.0

Performance Evidence

<table>
<thead>
<tr>
<th>Evidence of the ability to:</th>
<th>Page reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>• apply mathematical techniques and methods of calculation,</td>
<td>57–60</td>
</tr>
<tr>
<td>including to calculations of:</td>
<td></td>
</tr>
<tr>
<td>• goods and services tax (GST)</td>
<td></td>
</tr>
<tr>
<td>• simple interest</td>
<td>49–50</td>
</tr>
<tr>
<td>• compound interest</td>
<td>50–51</td>
</tr>
<tr>
<td>• basic loan calculations</td>
<td>48–52</td>
</tr>
<tr>
<td>• effectively use office equipment and software to enter data</td>
<td>Throughout learning guide</td>
</tr>
<tr>
<td>and complete calculations</td>
<td></td>
</tr>
<tr>
<td>• check for accuracy of computational results and correct</td>
<td>38–40</td>
</tr>
<tr>
<td>errors where required</td>
<td></td>
</tr>
<tr>
<td>• record calculation worksheets for future reference and use.</td>
<td>Throughout learning guide</td>
</tr>
</tbody>
</table>

Knowledge Evidence

The candidate must be able to demonstrate the following knowledge to effectively complete the tasks outlined in the elements and performance criteria of this unit, and to manage tasks and reasonably foreseeable contingencies in the context of the work role.

<table>
<thead>
<tr>
<th>Page reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughout learning guide</td>
</tr>
</tbody>
</table>

• Industry-standard techniques and methods to perform routine calculations

• Typical computational errors and ways to check for them 38–40

• Key features of equipment and software required to conduct routine financial calculations Throughout learning guide
What you need to complete this Unit

☐ Your own copy of this learning guide
☐ Basic computer knowledge
☐ Calculator with scientific functionality
☐ USB memory stick
☐ Folder to store printouts to submit as your evidence portfolio

Access to a computer with:
☐ Microsoft Excel or another spreadsheet application
☐ access to the internet
☐ printer.

How to use this learning guide

Spreadsheet applications other than Microsoft Excel
The instructions in this learning guide use Microsoft Excel (Windows) as it is the most common spreadsheet application used in the workplace environment.

If you are using another spreadsheet application, refer to that application’s help function if you have trouble completing some of the exercises.

Website addresses
The website addresses in this learning guide are correct at the time of printing, however are subject to change. If the full URL is not successful, go to the homepage of the website and use the available search engine to find the content.
**Decimals**

The word decimal means based on ten. To understand decimal numbers you must first know about place values. When you write numbers, the position of each number is important.

In the number 327:
- 7 is in the **units** position, meaning just 7 ones (seven)
- 2 is in the **tens** position meaning 2 tens (twenty)
- 3 is in the **hundreds** position, meaning 3 hundreds (three hundred).

The position of the **decimal point** is important. It is exactly to the right of the units position.

Now the numbers can continue with smaller and smaller values, from tenths to hundredths and so on, for example:

```
18.671
```

To express a fraction as a decimal, divide the numerator by the denominator:

\[
\frac{n}{d}
\]

**Examples**

1. The Australian currency is a decimal currency, 100 cents = $1.00, 1000 cents = $10.00. Using decimals make it easier to pronounce the values as well as using financial calculations to achieve results.

2. \(\frac{23}{10}\) is expressed as the decimal 2.3

3. An employee works 38 hours per week over 5 days. How many hours and minutes per day are worked?
   \[38 \div 5 = 7.6\text{ hours}\]
   
The employee works 7 hours and 0.6 of another hour. So how many minutes does the 0.6 represent?
   \[0.6 \times 60 = 36\text{ minutes}\]
   
   Therefore an employee works 7 hours and 36 minutes each day. How can you check that this is correct?

   Multiply 36 minutes x 5 days = 180 minutes ÷ 60 minutes (1 hour) = 3 hours
   
   Multiply 7 hours x 5 days = 35 hours
   
   Add the 3 hours + 35 hours = 38 hours worked in the week.
Chapter 2: Spreadsheets (Excel)

A spreadsheet is a grid of rectangular pigeon holes (called cells). Spreadsheets are used to store and manipulate numerical data. Formulas are created to perform calculations and charts can be created in a variety of styles to show the data in visual form. This learning guide uses Microsoft Excel to create and amend spreadsheets. If you are using another spreadsheet application, complete the exercises in this Chapter using that application.

Function of spreadsheets
Spreadsheets are used to:
• perform financial calculations
• record and compare data
• create invoices
• record dates/times worked
• store pay details.

Excel naming conventions
Microsoft Excel refers to individual spreadsheets as worksheets. Worksheets are combined into files called workbooks.

Starting Excel

Exercise 6
1. Click on the Start button Windows.
2. A list of apps may display. Alternatively click on the All apps button Apps.
3. Scroll down the list of apps installed on the computer.
4. Click on Excel 2016 to open Excel.

Exiting Excel

To exit Excel, click on the Close button at the top right corner of the Excel screen. If you have any open workbooks you will be prompted to close them first.
Moving around a worksheet

Click your mouse on any cell to make it active. Key combinations can also be used to move between cells.

<table>
<thead>
<tr>
<th></th>
<th>Keyboard</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>A column at a time</td>
<td>→ or ←</td>
<td>Move mouse and click</td>
</tr>
<tr>
<td>A row at a time</td>
<td>↑ or ↓</td>
<td>Move mouse and click</td>
</tr>
<tr>
<td>Beginning of a row</td>
<td>Home</td>
<td>Move mouse and click</td>
</tr>
<tr>
<td>Cell A1</td>
<td>Ctrl Home</td>
<td>Point and drag vertical scroll box up</td>
</tr>
<tr>
<td>Bottom right corner</td>
<td>Ctrl End</td>
<td>Point and drag vertical scroll box down</td>
</tr>
<tr>
<td>cell of data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Next worksheet</td>
<td>Ctrl Page Down</td>
<td>Move mouse and click on sheet tab</td>
</tr>
<tr>
<td>Previous worksheet</td>
<td>Ctrl Page Up</td>
<td>Move mouse and click on sheet tab</td>
</tr>
</tbody>
</table>

Scroll bars

The vertical and horizontal scroll bars at the right and bottom of the screen will move you around the worksheet area, beyond what you can initially see on your screen.

- Click on the \[\text{▼}\] at the bottom right of your screen on the vertical scroll bar to move down the worksheet.
- Click on the \[\text{▲}\] to move up the worksheet.
- Dragging the scroll box on the vertical scroll bar will move quickly up or down the worksheet.
- Use the horizontal scroll box at the bottom of the screen to move to the left or right of a worksheet or click on \[\text{◀}\] and \[\text{▶}\].
## Selecting cells

<table>
<thead>
<tr>
<th>Selecting</th>
<th>Mouse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single cell</td>
<td>Click in the centre of the cell.</td>
</tr>
<tr>
<td>Range of cells</td>
<td>Click in the first cell in the range and drag to the last cell in the range. Alternatively, click in the first cell, hold down the Shift key and click on the last cell.</td>
</tr>
<tr>
<td>Non-adjacent cells</td>
<td>Select the first range of cells then hold down the Ctrl key on the keyboard and select the second range of cells and so on.</td>
</tr>
</tbody>
</table>
| An entire column(s)       | Click on the column header OR with the cursor in the column press Ctrl Spacebar.  
**Adjacent columns**  
Click and drag on the column headers.  
**Non-adjacent columns**  
Hold down the Ctrl key and click on each column header. |
| An entire row(s)          | Click on the row header OR with the cursor in the row press Shift Spacebar.  
**Adjacent rows**  
Click and drag on the row headers.  
**Non-adjacent rows**  
Hold down the Ctrl key and click on each row header. |
| Entire worksheet          | Click on the Select All button above the first row header and to the left of the first column header OR press Ctrl A. |

![Select All button](image)

### Deselecting selected cells
Click in a blank cell outside the selected cells.

## Closing a workbook

To close a workbook, leaving Excel open, click on **FILE** and click on Close. Click on Save to save any work you have done.
Exercise 10
Walter has provided you with the following data for February 20yy.

Sales 65000
Cost of sales 19000

Expenses
Advertising 1500
Bookkeeping 300
Bank fees 50
Electricity 175
Insurance 500
Wages 6500
Super 585

He would like to know the following:

• gross profit
• total of expenses
• net profit.

1. Design a simple spreadsheet to provide Walter with a profit and loss statement for February 20yy.
2. Save the spreadsheet to your USB memory stick or as instructed by your trainer with the name Walters Welding Profit and loss Feb 20yy.
3. Print the spreadsheet as instructed by your trainer and place it in your evidence portfolio.

Creating simple straight line graphs in Excel
A straight line graph shows the relationship between two sets of data in graphical form. In its simplest form you are creating a visual aid to display solutions to a given problem.

Exercise 11
Sally owns a pie shop. She sells the pies for $4.00 each. She wishes to produce a visual aid to calculate what her total sales income will be depending on the number of pies sold.

1. Create a new Excel workbook and input the data as follows:

2. Select cells B1 to H1 and click on Merge & Center button from the Alignment Group on the Home Ribbon.
3. Select cells A2 to cell H3.
Chapter 3: Input data

Financial data sources

Financial data represents an accumulation of values resulting from one or more business transactions. Generally, paperwork is called source documentation. Examples include:

- total daily sales figures from cash register receipts or invoices raised
- receipts and invoices from suppliers
- timesheets for payroll calculations
- bank statements for interest payments
- tax tables to calculate pay as you go withholding (PAYGW) deductions
- price lists from suppliers.

Most businesses will use some form of accounting software to collate and total this data to provide the summary data necessary to perform these calculations.

A business may also use data provided by government, industry bodies or financial institutions to prepare calculations, for example:

<table>
<thead>
<tr>
<th>Benchmarking</th>
<th>Comparing operations of one business against the expected standards for the relevant industry sector.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer price index (CPI)</td>
<td>The CPI is the official measure of inflation. Its use by business could be by way of a lease on a business premises where the payments are increased on a regular basis against the CPI.</td>
</tr>
<tr>
<td>Australian Bureau of Statistics</td>
<td>Provides a range of statistical information that can be used by a business in benchmarking, business development and marketing.</td>
</tr>
<tr>
<td>Financial institutions</td>
<td>Provide calculators and other tools and resources to assist a business to make decisions on general banking, borrowing and investing.</td>
</tr>
</tbody>
</table>

Any source documentation or other data must be used appropriately otherwise you may return incorrect results. Documentation may come from computerised accounting packages, bank statements or employee’s calculating their own hours of work, but mistakes can be made.

It is good practice to check the calculations on the source documentation prior to performing any financial calculations. The best way to do this is to use a calculator or mental arithmetic to check both line items and totals in any source document.
Data may also come from industry tables providing you with formulas or amounts to assist in performing a calculation. A good example of this is the Australian Taxation Office (ATO) pay as you go withholding (PAYGW) tax tables.

<table>
<thead>
<tr>
<th>Weekly earnings</th>
<th>Amount to be withheld</th>
<th>Amount to be withheld</th>
<th>Amount to be withheld</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 $</td>
<td>2 $</td>
<td>3 $</td>
</tr>
<tr>
<td>$851.00</td>
<td>127.00 247.00</td>
<td>$936.00 156.00 276.00</td>
<td>$1021.00 185.00 305.00</td>
</tr>
<tr>
<td>$852.00</td>
<td>127.00 247.00</td>
<td>$937.00 156.00 276.00</td>
<td>$1022.00 185.00 305.00</td>
</tr>
<tr>
<td>$853.00</td>
<td>127.00 247.00</td>
<td>$938.00 156.00 277.00</td>
<td>$1023.00 185.00 305.00</td>
</tr>
<tr>
<td>$854.00</td>
<td>128.00 248.00</td>
<td>$939.00 157.00 277.00</td>
<td>$1024.00 186.00 306.00</td>
</tr>
<tr>
<td>$855.00</td>
<td>128.00 248.00</td>
<td>$940.00 157.00 277.00</td>
<td>$1025.00 186.00 306.00</td>
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<tr>
<td>$856.00</td>
<td>128.00 248.00</td>
<td>$941.00 157.00 278.00</td>
<td>$1026.00 187.00 306.00</td>
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<tr>
<td>$857.00</td>
<td>129.00 249.00</td>
<td>$942.00 158.00 278.00</td>
<td>$1027.00 187.00 307.00</td>
</tr>
<tr>
<td>$858.00</td>
<td>129.00 249.00</td>
<td>$943.00 158.00 278.00</td>
<td>$1028.00 187.00 307.00</td>
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<tr>
<td>$859.00</td>
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<td>$944.00 158.00 279.00</td>
<td>$1029.00 188.00 308.00</td>
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<tr>
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<td>$945.00 159.00 279.00</td>
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</tr>
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<td>$946.00 159.00 279.00</td>
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</tr>
<tr>
<td>$862.00</td>
<td>130.00 251.00</td>
<td>$947.00 159.00 280.00</td>
<td>$1032.00 189.00 309.00</td>
</tr>
<tr>
<td>$863.00</td>
<td>131.00 251.00</td>
<td>$948.00 160.00 280.00</td>
<td>$1033.00 189.00 309.00</td>
</tr>
<tr>
<td>$864.00</td>
<td>131.00 251.00</td>
<td>$949.00 160.00 280.00</td>
<td>$1034.00 189.00 309.00</td>
</tr>
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<td>$865.00</td>
<td>131.00 252.00</td>
<td>$950.00 160.00 281.00</td>
<td>$1035.00 190.00 310.00</td>
</tr>
<tr>
<td>$866.00</td>
<td>132.00 252.00</td>
<td>$951.00 161.00 281.00</td>
<td>$1036.00 190.00 310.00</td>
</tr>
<tr>
<td>$867.00</td>
<td>132.00 252.00</td>
<td>$952.00 161.00 281.00</td>
<td>$1037.00 190.00 310.00</td>
</tr>
<tr>
<td>$868.00</td>
<td>132.00 253.00</td>
<td>$953.00 161.00 282.00</td>
<td>$1038.00 191.00 311.00</td>
</tr>
<tr>
<td>$869.00</td>
<td>133.00 253.00</td>
<td>$954.00 162.00 282.00</td>
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<td>133.00 253.00</td>
<td>$955.00 162.00 282.00</td>
<td>$1040.00 191.00 311.00</td>
</tr>
</tbody>
</table>

The above is an extract in an example of a weekly tax table for PAYGW. It shows the gross weekly earnings (column 1) and then provides two columns relating to the tax free threshold – either with (column 2) or without (column 3).

To use this table, select the gross weekly earnings and then select the amount of tax from the appropriate column in 2 or 3.

**Example**

An employee earns $948 gross for the week and is claiming the tax free threshold.

What is the amount to be withheld?

$160.00 as underlined in the tax table above.
Chapter 5: Loans and debit interest

A loan is defined as:

An arrangement in which a lender gives money or property to a borrower, and the borrower agrees to return the property or repay the money, usually along with interest, at some future point(s) in time. Usually, there is a predetermined time for repaying a loan, and generally the lender has to bear the risk that the borrower may not repay a loan. ¹

Interest is defined as a payment made by a borrower to a lender in exchange for the use of the borrowed funds over a (usually) predetermined period of time. Typically interest will be paid periodically over the period of that loan but, in some cases, it can be paid in full at the end of the loan period.

A loan occurs where one person (or entity) provides a sum of money to another. There would usually be an agreement in place whereby the borrower would repay the lender a sum in excess of the amount actually lent. This is the cost to the borrower (and the reward to the lender) for the use of these funds over the agreed period of time and is usually referred to as interest.

Basic loans

A loan normally comprises of two elements:

1. A principal amount – this is the amount of money the lender agrees to lend to the borrower which will, ultimately have to be repaid.

2. An interest amount – this is the amount which will be added to the principal by the lender as the price for the funds being lent.

In the simplest scenario, a lender agrees to lend a borrower an amount of $10,000 for a given period on the assumption that the borrower will repay an amount of $11,000 at an agreed later date.

The principal amount is the amount lent = $10,000

The interest amount is the addition which the borrower will need to repay the lender = $1000.

¹ Retrieved 13 May 2013 from www.investorwords.com/2858/loan.html
Simple interest

Simple interest is the most basic type of interest calculation. It is also the easiest to calculate.

It is the amount of interest paid on a loan based on the assumption that such interest is only charged at the end of the loan term. The loan plus interest is repaid in one go at the end of the loan period.

To calculate simple interest apply the following formula:

**Interest** = **Principal** (amount lent) multiplied by **Rate** (expressed as a percentage) multiplied by **Time** (in years).

\[ I = P \times R \times T \]

**Example**

If a business borrows $1000 at 8% for one year, the interest payable will be calculated as:

\[
\text{Interest} = 1000 \times 8\% \times 1 = 80.00
\]

To look at this slightly differently, the total amount which the business will have to repay the lender is $1000 (the original amount borrowed) plus $80.00 (the interest accrued on the borrowings over one year) which comes to a total of $1080.

In the real world, simple interest calculations are rarely used. This calculation assumes that the borrower will take out a $1000 loan at the beginning of the time and will make no repayments until the end of the loan, when it will be repaid in full. It also assumes that the interest will only be charged at the end of the loan and that no interest balances will be added in the interim. Additionally, these types of calculations take no account of any repayments which may be made over the period of the loan.

**Exercise 22**

Walter has obtained a loan from his bank to purchase a new welder for a total cost of $30,000. This loan is repayable in total at the end of the loan period.

Interest at a rate of 8.5% is to be calculated using a simple interest formula with all interest being added to the payout figure at the end of the five-year period.

1. Calculate the total amount of interest Walter will be required to pay at the end of the loan period. Show your working including the formula used.

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Chapter 7: Goods and services tax (GST)

GST is a broad based tax which was introduced in Australia on 1 July 2000. It is a tax on consumption, the liability for which falls on the ultimate consumer or purchaser of the goods and services. GST is not a tax on business. In many countries, for example the United Kingdom, the GST is referred to as a value added tax (VAT).

The term 'broad based' refers to the fact that the GST is applied to almost all products and services across the Australian economy. There are various exclusions from GST for certain products and services. Examples of exclusions include:

- fresh and unprocessed foodstuffs
- domestic rent transactions
- exports of goods and services to countries outside Australia
- interest received or paid.

Upon introduction to Australia in 2000, the rate of GST was set at 10%. There has been no change to this rate since its introduction.

Depending upon the circumstances, prices may often be quoted as being either inclusive or exclusive of GST.

**GST exclusive**

Where transactions are being conducted between one business and another, it is common for prices to be quoted exclusive of GST. The most common reason for this is that business wants to know the real cost to them as opposed to knowing what their actual cash outlay will be.

A GST exclusive transaction refers to a transaction where a price is quoted before the addition of GST to that price. The 10% GST will have to be added to the quoted price in order to obtain the total amount payable.

**GST inclusive**

There is a legal requirement in retail environments for the price of goods to be displayed with the GST inclusive price.

A GST inclusive amount refers to a price quoted after the addition of GST.

When presented with a GST inclusive price of an item the GST component of the price equals $\frac{1}{11}$ (one-eleventh) of the total price.