MATHS FOR ACCOUNTANTS

Associated Accounting Material

Suitable for all students wishing to advance in accounting

Study Manual

Course writer
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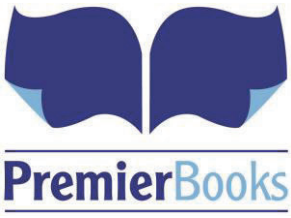

Published on:
26-02-21

Published by:
Premier Books Ltd
Greenwich House
Eastfield Road
South Killingholme
North Lincolnshire
DN40 3DQ
Telephone 01469 515444

This page is for your notes

Contents

	Introduction	vi
Chapter 1	The Need for Ethical Behaviour	1
Chapter 2	The Need for Efficient Accounting	17
Chapter 3	Company Policies and Procedures	25
Chapter 4	Ethics and Sustainability	51
Chapter 5	Working with Numbers	67
Chapter 6	Presenting Data	83
Chapter 7	Methods of Communication	97
Chapter 8	Organising your own Work	121
Chapter 9	Team Working	135
Chapter 10	Developing Skills and Knowledge	147
	Answers to Practice Questions	153
	Practice Assessment	185
	Answers to Practice Assessment	207

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Alan is a qualified teacher. He gained his honours degree in education from Nottingham University and he went on to teach Mathematics, Modern Languages and Music in schools for 18 years.

He then turned his attention to accountancy, qualifying from the AAT and taking up various accounting roles both in private practice and industry. He spent 6 years in a large company in management accounts while at the same time taking private clients for help with bookkeeping, payroll, VAT and taxation.

From March 2006 he has been a tutor at Premier Training, with over 300 students worldwide under his guidance at one time or another.

Introduction

So you've decided you'd like to work in accountancy – good choice. Every business will benefit from the services of an accountant. But is your maths up to the standard required?

Well, in fact, you won't need any more mathematical skills than those you learnt at school. We can't truthfully say that maths isn't required in accountancy, but we can say that the standard required is not above that required in your exams when you were 16 (or thereabouts). If you have GCSE maths then that is all you will need.

"But I haven't done much maths since I left school", I hear you say. "And even then I wasn't much good at it". So that's where this book fits into your studies. We will take you through all the mathematics required to complete most accountancy courses. Each topic will be presented from the very basic to the more complex – but remember complex doesn't mean complicated. The topics will relate directly to the areas of accountancy you are likely to study and each step will be fully explained with true-to-life situations and scenarios.

You can use this book in two ways. Firstly you can go through each chapter one by one. If you are taking a course in mathematics for accountants you will need to do this one chapter after another. Alternatively you can use it as reference material where you can learn the skills as and when you need them in your accountancy studies and career.

The book goes from the very basic to the more complex. You may already feel confident in some areas but be sure to read each chapter for tips and methods you may not have previously thought of.

However you use this book, we hope you will gain the mathematical skills to excel in your career.

This page is for your notes

Chapter 1

Arithmetic

In this chapter we will be looking at the four basic operations in mathematics.

We will look at addition, subtraction, multiplication and division.

We will see what the equals sign (=) really means.

We will see how to deal with negative numbers.

The chapter also covers estimation and rounding.

Arithmetic? That's the same as maths or mathematics isn't it? Well yes and no. Many people use the word to mean the same as maths or working with numbers. But mathematicians use it to mean the four basic operations of addition, subtraction, multiplication and division.

We'll take each of these in turn. Each section will go from the very basic calculations to the more complex. Take a look at each section even though you may feel confident in some areas. There may be tips or methods you hadn't previously thought of.

Addition

You'll need to use addition when you see the following words:

Add up; sum; total; count; plus

Long gone are the days when accountants needed to add up large lists of figures in their head and come up with the right total in a matter of seconds. Though this may seem clever, its usefulness has disappeared with the invention of the pocket calculator. Nevertheless it is still useful to be able to add up two or three numbers in your head as this will save time. You can only get proficient at this with practice.

If you're a parent you will probably have heard the term 'number bonds', or 'number pairs'. This is where you are to find two numbers that add up to a given total. For example, can you find two numbers that add up to 10? This will be quite straightforward. We can have 1 + 9, 2 + 8, 3 + 7, 4 + 6, and 5 + 5. You'll find it quite useful if you extend this to number bonds of 20, 50, 100, and 1,000.

Test Yourself

See how quickly you can find the answers to these without using a calculator:

12 +		=	20
37 +		=	100
427 +		=	1,000

You should try out your own number bonds. Think of a number at random and then find the number that makes 100 or 1,000 when added to your random number. If you have children of school age, you can make this into a game. See who can find the right answer first. It will help you and it will help your children.

So how is this helpful in your accounting studies? Well there are lots of uses. For example we may need to reach a target for sales in a day. If we've sold 62 items and we need to reach a target of 100 for the day, how many more do we need to sell?

It gets a little more difficult if we have a sales target in value. Let's suppose we need to reach a target of £10,000 for the week and we've already taken £6,200 in sales, how much more money do we need to take in order to reach our target?

Remember that for addition the order doesn't matter. 62 + 18 is the same as 18 + 62. However, place order (the order in which you put the individual figures) is important Place order shows you whether the figure is the units, tens, hundreds, thousands etc.

Numbers are placed in order with the units on the right and then the tens, hundreds, thousands etc.

Th H T U

So if we see, 1256 we know there is one thousand, two hundreds, five tens and six units. This may seem a little obvious, but it's important when adding up columns of figures.

If we want to add 1256 and 67 we must put them in the right column

Th	H	T	U
1	2	5	6
		6	7
1	3	2	3

If you put the figures in the wrong columns you will get the wrong answer. So if you're writing your numbers down in order to add them up you must be neat and organised.
If you put:

Th	H	T	U
1	2	5	6
	6	7	
1	9	2	6

You will get the wrong answer.

The equals sign (=)

I'm sure we've all used the equals sign at some time; but are you sure you know what it means? Well yes it does mean that this is the answer to our calculation, but it is also an equality sign (as the name suggests). It actually means that whatever is on one side of the equals sign must match what is on the other. You can think of it as a balance.

Whatever we put on one side, we must put an equal amount on the other to make it balance.

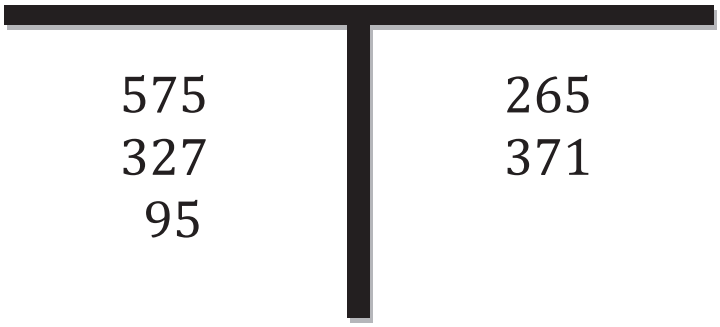
In its simplest form we can show it to be the answer to a calculation:

$$2 + 3 = 5$$

But it can also be used for multiple items on both sides of the equals sign.

$$2 + 3 = 4 + 1$$

In accounting you will encounter 'T' accounts where one side must balance with the other.



Here we see a 'T' account (called a 'T' account because the figures are set in a 'T' shaped structure). In accounting we will need to find the missing figure so that both sides are equal.

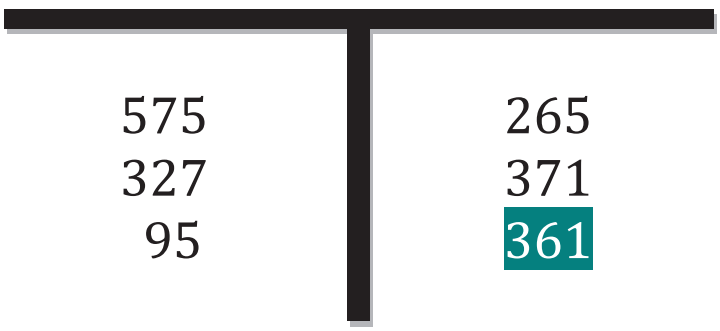
Let's add up the left hand side first. (You can use a calculator for this.)

575 + 327 + 95 = 997

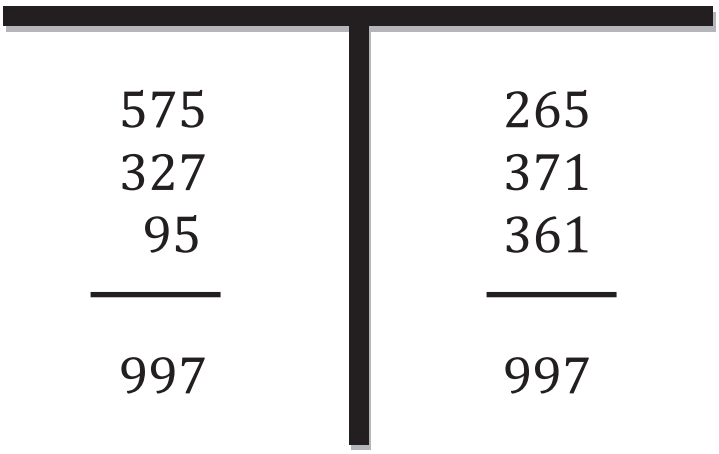
Now the right hand side

265 + 371 = 636

The difference is 361.



In accounting there are usually routines to check the accuracy of the figures. Therefore, it's usual to show the total of each side.



Sometimes it may be necessary to look at a group of numbers and work out which ones exactly match a given total. For example, a credit customer may transfer money into your bank account covering several invoices, but not all of them. Which ones have been paid?

It's common for people in business to offer other business people a credit facility. This means that the customer may make several purchases and only pay for them (say) up to 30 days after the invoice date. This customer will be a **credit** customer and he/she may have a number of outstanding invoices at any one time.

Let's say that your customer has the following invoices

£270.52

£320.45

£196.34

£50.00

£260.70

On your bank statement at the end of the month you see that the customer has transferred £516.86 into your account. How can you tell which invoices have been paid?