Cash Budgets.

2010 Question 9.

NB: There are actually two slightly different types of cash budgets so the one I've explained here is the one we see most often on exams. The other type is almost identical but with a few small differences. What I've done therefore is to just explain these differences at the bottom of these notes. Once you've mastered this type here, you can scroll to the bottom of these sheets and read about the extra things you need to know in case the second type of cash budget is asked.

Cash Budgets appear regularly as question nine on the leaving cert paper. The good news is that unlike a lot of other topics, there isn't a huge amount of writing or calculation to do in these - instead it's more about thinking logically and not making any silly computational errors. The basic gist of these is that we're given some info about the predicted income and expenditure of a business and just have to lay it out in a budget. There's essentially three parts to the budget - the income bit, the expenditure bit and the net cash bit. The best way to explain the answer is simply to show it to you and then tell you where the figures all came from. Ok, so here's the income bit first...

Cash Budget for Woods Ltd July - December 2011.

	Jul	Aug	Sep	Oct	Nov	Dec
Receipts						
Cash Sales	155800	163400	212800	220400	231800	239400
Credit Sales 1		123000	129000	168000	174000	183000
Credit Sales 2			123000	129000	168000	174000
Total Income	155800	286400	464800	517400	573800	596400

Right so where do all these numbers come from? If you look in the question you'll see a list of sales figures for each month and you might therefore wonder why we don't put these into the answer. The reason is that the figures given to us in the question are the *amount of sales we expect to have each month* whereas what we need in the budget is the *amount of money we expect to receive each month*. I hope you can see that these are two different things. Just because we sell something in January for example, doesn't mean we're going to get the money for it then. In fact it is far more likely that we won't get paid for things till a month or two later. A budget is designed to record *money* so the sales figures in the question on their own aren't much use to us.

What we need to look at along with the sales figures in the question are the 'cash collection patterns', or in other words the length of time it will take people to pay us after we sell them something. You'll find the information about this in the paragraph just under the monthly sales figures in the question.

With all of this info we can therefore work out how much money we think we're going to take in each month. For example the figure for sales in July is €410,000 and we're told that...

- 40% of this (€164,000) will be paid straight away, but we'll allow a 5% discount on this payment (5% of €164,000 = €8,200). So in July we will be receiving €155,800 (€164,000 - €8,200).

- The remaining 60% we are owed (60% of €410,000 = €246,000) will be paid half in the month after the sale (August) and half the following month (September). So that's half of €264,000; i.e €123,000 each month.

If you look back up at the answer can you see where these figures are? Because there are three different payments for each sale (the bit paid straight away, the bit paid a month later and the bit paid a month after that), we need three rows in the income section of our budget - that's why you'll see the three lines 'Cash Sales', 'Credit Sales 1' and 'Credit Sales 2' in the answer.

Now all we have to do is the exact same process for each month of sales. So let's try August. Remember the first thing is to look at the sales figure for August in the question (€430,000). Now we simply apply the payment rules we are given...

- 40% (€172,000) is paid straight away, but minus a 5% discount (€8,600). i.e €163,400.

- The remaining 60% (€258,000) is paid half in September and half in October (or €129,000 each month).

Slot those figures into the answer and then keep going with the next month - Easy!

You might wonder what happens when you get towards the end because if we are recording the December sales for example we know that some of this is paid to us in January and some in February - But there's no columns for January or February in the budget! The rule is that we were only asked to do a budget for July - December so that's all we have to worry about. Any items of income or expenditure that would happen after this date are not our concern and we simply ignore them.

Expenditure.

Right, so let's try the expenditure part of the answer. I've pasted it here and will explain all of the figures below...

	Jul	Aug	Sep	Oct	Nov	Dec
Payments						
Purchases 1		93100	102900	117600	122500	161700
Purchases 2			95000	105000	120000	125000
Wages	40000	40000	40000	40000	40000	40000
Variable O/H	102500	107500	140000	145000	152500	157500
Fixed O/H	44200	44200	44200	44200	44200	44200
Equipment	48000					
Interest	330	330	330	330	330	330
Total Exp.	235030	285130	422430	452130	479530	528730

Thankfully, even though it looks like there's loads going on here, it's really not that bad. The first step is to deal with the purchases in the same we we dealt with sales up in the income section of our answer. The purchases tend to be a little easier and if you look at note (iii) in the question you'll see that instead of having three payment periods (like we did for sales), there are only two for purchases. If this doesn't make sense just read through note two and you'll see it says that for purchases we need to make one payment the month after each purchase and one the following month (i.e. Two payments). So we make two lines for purchases in our answer and we start with the first month - July...

The figure for purchases for July in the question is €190,000 but remember this is *how much we are going to sell* in July and what we really want to know for our answer is *when are we going to pay for it?* So we look at the rules in note (iii) and they tell us that...

- 50% of the purchase (€95,000) will be paid for in the month after the purchase (i.e in August), but we have to minus a 2% discount (€1,900). So we'll be paying €93,100 in August.

- The other 50% (€95,000) will be paid the following month (September) and there's no discount for this.

Hopefully that seems straight forward enough. If you've followed along so far you'll be able to do August purchases. It says €210,000 worth of stuff will be purchased in August and therefore we'll be paying...

- 50% (€105,000) minus a 2% discount (€2,100) = €102,900 the month after the purchase; i.e in September.
- 50% (€105,000) the following month - October.

Now we simply keep going with the other months and fill across the rest of the purchases figures in our answer.

Ok so if you're good with the purchases figures, then we can look at the last few bits of info in the question - Note (iv). Have a look at note (iv) and you'll see a few other items of expenditure that we need to put into our budget. You'll notice they all say 'payable as incurred' at the end. This is just to let you know that whatever these payments are, they're paid in the month they happen, in other words there's none of the messing like we had with sales and purchases where things were still being paid for a month or two later. So lets put the three of these things in...

- The first one (wages) is easy. We're told that wages will be €40,000 per month so in our answer above you'll see I put €40,000 in each month. Brilliant!

- The second one (variable overheads) is only slightly more difficult. We're told it's €10 *per unit*. We therefore need to know how many units we are selling each month. Well in July for example we know we are selling €410,000 worth of stuff and if you look just below that at note (i) you'll see a sneaky bit of info that says the selling price of our products is €40. So if we're selling €410,000 of stuff at €40 each we must be selling 10,250 units! Equally if you look at August, we're selling €430,000 worth of stuff, divide this by the €40 selling price and you'll get 10,750 units. The variable overhead each month therefore is the amount of things we're selling multiplied by the €10 variable overhead.

- The third item of expenditure in note (iv) is the fixed overheads. It seems pretty straightforward because we're told it's €45,000 per month and it might look like we just slot this into each month of our answer. Crucially though you'll notice the bit in brackets "(including depreciation)" which is really important. Ultimately you might remember that a budget records *MONEY* that we think we're going to receive or spend and if you know anything about accounting you'll know that depreciation isn't *money*. Depreciation is a bad thing but it doesn't involve us actually handing over money to someone. So in a budget, depreciation should not appear (it goes in a profit and loss account). If that €45,000 of fixed overheads each month includes depreciation therefore, we need to find out what the depreciation is and take it away from the €45,000 before we put the figure into our budget. The good news is that the depreciation is easy to work out. If you look at the bottom of note (iv) you'll see we're told that equipment will be bought for €48,000 with an expected life of 5 years. This means that in five years it will be worth nothing or in other words, the depreciation is €9,600 per year (one fifth of the cost). Once you know the depreciation is €9,600 per year, simply divide by 12 to get the monthly depreciation (€800). So that's it - Our fixed overheads are €45,000 each month minus the depreciation of €800 each month: €44,200.

Almost finally, there's two items of expenditure left and they're the ones that loads of people forget. Remember the little story about buying new equipment that we needed to read in order to work out the depreciation? Well since we were told then that we would be spending €48,000 on equipment in July, we need to make sure we include this in our budget.

Equally, that story about the equipment said that we'd have to borrow money to buy the equipment and that the loan of €44,000 would have interest of 9% per year (which is €3,960 a year or €330 a month). These repayments of €330 a month need to be included in our list of expenditure in our answer.

NB: If you're worried about the sentence in the question that says "but capital loan repayments will not commence until January 2012", don't panic. It's actually there to help you and it basically means that when we borrowed the €44,000, the only things we need to put into our budget are the monthly interest repayments (€330) and that we can ignore the fact that the loan itself (€44,000) will need to be repaid at some stage.

Net Cash Section.

The last section of a cash budget is the net cash bit - the part where we see whether there will be a surplus or a deficit at the end of each month. I've stuck the whole budget here and will explain the figures from the net cash bit below...

	Jul	Aug	Sep	Oct	Nov	Dec
Receipts						
Cash Sales	155800	163400	212800	220400	231800	239400
Credit Sales 1		123000	129000	168000	174000	183000
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Wages	40000	40000	40000	40000	40000	40000
Variable O/H	102500	107500	140000	145000	152500	157500
Fixed O/H	44200	44200	44200	44200	44200	44200
Equipment	48000					
Interest	330	330	330	330	330	330
Total Exp.	235030	285130	422430	452130	479530	528730
Net Cash	-79230	1270	42370	65270	94270	67670
Opening Cash		-35230	-33960	8410	73680	167950
Loan	44000					
Closing Cash	-35230	-33960	8410	73680	167950	235620

The 'Net Cash' line should be easy enough to work out - It's the total income each month minus the total expenditure for that month. In July for example the total income is €155,800 and the total expenditure is €235,030 so we look like we're going to lose €79,230 that month.

Next we have the 'Opening Cash' line. This is where we record the amount of money we had at the start of each month. The question never told us if we had any money at the very start of July so that's why there's no opening cash for the first month. For every other month the opening cash is simply the closing cash from the previous month. Once you work out the closing cash for any given month (which I'll show you in a minute) you then record that as the opening cash for the next month.

The second last line as you can see is really straightforward. If the question tells us that we took out a loan in any month, this is where we slot it in. So in July you'll remember that we borrowed €44,000 to buy our equipment and so we pop that into our answer.

Finally, the most important (but really easy) bit - the 'Closing Cash' line. The closing cash is simply the amount of money you'll be left with at the end of each month. To work this out we add the net cash (the amount we think we'll make each month) to the opening cash (what we already had to begin with) and also add any loans we received. In other words the closing cash is the total of the three lines above it.

And that's the budget done!

Part (b): The Profit and Loss Account.

If you can understand the difference between a budget and a profit & loss account, then part (b) will be easy. Remember...

- A budget records any money we think we will spend or receive for any reason in a given time period.

- A profit & loss account however isn't so much concerned with the money but rather with *when* things happen. For example if we sell something this year but haven't been paid for it yet, it won't go in this years budget (because no money has been received) but it will go in this years profit & loss account (because the sale happened this year).

So have a look at the answer to the profit and loss account below and then I'll tell you where all the figures come from...

Budgeted Profit and Loss Account for Woods Ltd (Jan-Dec 2011)

	€	€	€
Sales			3220000
Opening Stock		0	
Purchases		1570000	
Closing Stock		0	1570000
Gross Profit			1650000
Gains.			
Discount Received			12200
			1662200
Expenses.			
Discount Allowed		64400	
Wages		240000	
Variable Overhead		805000	
Fixed Overhead		265200	
Interest		1980	
Depreciation		4800	1381380
Net Profit			280820

Right so let's start from the top. The sales and purchases figures are simply the total of the six monthly sales/purchases figures from the question. They even give you these totals if you look at the question so you won't need to add them up yourself. Remember, what we want in the profit and loss account is the amount of sales and purchases that happened this year (not when are we getting paid or paying for these), so that's why we use the figures from the question and not the figures we put into our budget in part (a).

You'll notice that the opening and closing stock figures are blank - there's no mention of stock anywhere in the question so there's nothing we can put here. (There's definitely a mention of closing CASH, but that's a different thing to STOCK so don't confuse them).

Next we look for any gains and the only one is discount received. This might have slipped your mind but remember back when we were putting the purchases into the cash budget we were told that we received a discount on the first payment we made each month? Well now's the time to record that as a gain. The discount was 2% on the first half of the purchase payment (check back on note (iii) if you don't believe me), so how can we work out the total discount received for all the purchases? If you thought about getting half of the total purchases figure (€1,570,000) and then finding 2% of that you're almost brilliant, but not quite. Here's the sneaky bit - Does it ring a bell with you that the discount was received 'the month after the purchase'? If so, when will we receive the discount for the December purchases? If you just said January in your head, you're a genius and totally correct. The relevance of that is that we're currently doing a profit and loss account for the six month period up until the end of December and therefore (here's the important bit) *we shouldn't include the discount we are receiving on the December purchases* (because this isn't something that is happening this year). So the total discount received in this six month period is the total purchases (€1,570,000) MINUS the December purchases (€350,000) = €1,220,000. Then we half this figure (€610,000) and find 2% of that (€12,200).

If you were ok with that, the first expenses figure will be easy. The discount that we allowed to others needs to be recorded as an expense but the good news is that this discount was given in the month of sale (not the month after like the purchases discount). So to find the total discount we allowed in the six months, we get the total sales figure (€3,220,000), get 40% of it and then find 5% of that. The reason I'm using 40% and 5% is because they were the rules we were told in note (ii) to calculate the discount we give people each month.

There's no tricks in the next four expenses - The wages figure, the variable overheads figure, the fixed overheads figure, and the interest figure are all just the totals of the six months in the budget - Easy!

That therefore leaves us with the very last number in the whole question - Depreciation. Now remember, depreciation didn't appear in the budget because it doesn't involve actually spending money, but as you hopefully know from other topics, it always goes in a profit and loss account. All you have to do therefore is remember that the discount is €9,600 (one fifth of the €48,000 value of the equipment) and so in this six month account we are doing we should record half of this: €4,800.

Finally, you might be wondering why the cost of the equipment itself isn't in the list of expenses above. Well it appeared in the budget because we spent money buying it (and a budget records *any* income or expenditure) but the expenses section of a profit and loss account never includes things like equipment, vans or buildings. Why? Because those things are 'Fixed Assets' and so the company will record them in their Balance Sheet.

To summarise then...

- A budget doesn't include depreciation (because no money has been spent); and
- A profit and loss account doesn't include fixed assets.

Part (c) Theory Question.

Just go back to the page you got these notes from and click on 'Accounting Theory' under the 'Class Notes' heading. My Accounting Theory notes contain the theory from all of the topics on the course so you'll need to scroll down till you see the 'Budgets' heading and there you'll find an explanation of the theory that can be asked in this topic (including obviously the things that were asked in this particular question).

<u>NB: Second Type of Cash Budget.</u>

As was mentioned at the top of these notes, there is a second type of cash budget that comes up less often and is slightly different. Basically the layout of the answer is the same but the question might throw you a little. I've used the 2002 question (Q.9) to explain the five main differences below...

<u>1. Purchases.</u>

You'll immediately notice when you look at 2002 Q9 that there's no figures for purchases. This is because they make you work them out in this type of budget. To do this, we need to use notes (ii), (v) and (vi). So here's the story: Note (ii) tells us that profit is 25% of sales, which is a fancy way of telling us that purchases are 75% of sales (in other words if 25% of every sale is our profit, the other 75% must be the original cost of the products). So with that bit of info we've immediately found out that purchases are simply 75% of sales. The one extra little complication is in note (v) which is telling us that each month we need to buy the things we are going to sell NEXT MONTH. So the stuff we need to purchase in January is the stuff we are going to sell in February. And that's it: To find the purchases figure for each month you just find 75% of the <u>next month's sales.</u> The purchases figure for January for example is €60,750 (75% of the February sales), February purchases are €56,250 (75% of March sales), etc.

If you are wondering about the relevance of note (vi) it's aiming to help you not confuse you and you can basically ignore it. It's just saying that there's nothing tricky about when you pay for your purchases in this type of budget (remember in the other type of cash budget you always pay for purchases a bit in one month, a bit in another, etc). In these budgets once you work out the purchases figure just lob the total in.

2. Loan.

In the other type of cash budget we are simply told how much the loan is and when we get it (e.g In 2010 we were told we borrowed €44,000 in July). In the less common type of cash budget (such as in 2002), the loan issue is a little more cryptic. Look at notes (iii) and (iv) from 2002 and you'll see what I mean. What these are saying is that you need to work your way down through your whole answer and when you get to the very last line of your budget (the 'Closing Cash') check to see if the figure is at least €6,000. If it isn't, you need to go back up one line in your budget and add a loan in which will make sure that the closing cash equals at least the required amount (in this case €6,000). Note (iv) adds one slight complication in that it tells us we can only borrow in multiples of €1,000. So in the 2002 question for example the closing cash would have been -€15,350 if we didn't get a loan. To make it up to the required €6,000 figure you might think we would borrow the difference (€21,350) but note (iv) has told us to borrow in multiples of €1,000 so we have to take a loan of €22,000.

The loan interest as you might imagine is also a little trickier in this type of budget. The crucial issue is the timeframe, in that if you remember from a minute ago, we didn't know how much we were going to borrow until *the end* of the month. So at the end of January we realised we needed to borrow €22,000 and if we had done out the rest of the answer you would have seen that at the end of February we also needed to borrow a further €5,000. So when you get to the profit and loss account in part (b) the loan interest figure is...

- €22,000 @ 10% for 5 months

  Plus

- €5,000 @ 10% for 4 months

The 10% loan interest is given in note (iv) and the months are because that's how long we had each loan for - the loan we borrowed at the end of January for example has been with us for 5 months (Feb, Mar, Apr, May, June) by the time we get to the end of June. We don't count January because we only borrowed the money when the month was over.

So what happens to loan interest in the cash budget? In these questions we always get told what to do and in the case of the 2002 question the info is in note (xii). Here we find out that there is only one repayment to be recorded in the budget and that it's to be recorded in June. The amount is one quarter of the money we borrowed on the 31/1 (i.e one quarter of €22,000, or €5,500) together with the interest on the bit we're repaying (i.e. the interest on the €5,500). Since the interest due on the €5,500 is €229 (€5,500 @ 10% for 5 month), our loan repayment to appear in the budget in June is €5,729 (€5,500 + €229).

3. Opening Cash January.

In the other type of cash budget there's never any mention of opening cash so our opening cash is always blank in the first month of our cash budget. In this type of budget though you'll notice they gave us some figures at the very top of the question (balances at the start of the year) and one of them is cash of €1,500. This figure should therefore appear as the opening cash for the first month down at the bottom of your budget.

4. Prepaid Expense.

This type of cash budget always includes a prepaid expense also. If you check out note (xi) you'll see it says we're paying rates of €2,400 for six months at the start of April. So in our budget we just put €2,400 in April (because that's when we're spending the money), but in our profit and loss account we need to know how much we are spending on rates *for this six month period* (because the question has asked us to do a profit and loss account up till the end of June only). So in the profit and loss account we don't include half of the €2,400 payment (because three of the six months would be *after* our accounts end) and sneakily we *do* include the 3 months of rates mentioned at the very top of the question in our opening balances (because these are the rates for the first three months of the year that we must have paid at the very start of the year). So in the profit and loss accounts the rates figure is the €600 for the first three months of the year plus the €1,200 for the second three months of the year.

5. Opening and Closing Stock.

Finally, at the start of the profit and loss account just after entering sales and purchases, we need to record figures for opening and closing stock. In the other type of cash budget there are no figures for stock but in this type there are so I'll tell you where to find them. The opening stock is easy - it's the €47,250 in the little list of opening balances at the very start of the question.

The closing stock is only a tiny bit trickier. You might remember that when we work out our purchases figures each month in this type of budget we make our purchases based on *the following months sales*. In other words the stuff we buy this month is the stuff we are going to sell NEXT month. So the closing stock figure at the end of June is basically the purchases figure for June - why? Because the stuff we buy in June is for selling in July so we still have it at the end of June. Brilliant!