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Farm Accounts.

2006 Question 2.

Club accounts, service firms and farm accounts are three incredibly similar topics and it's probably best to cover them in that order. If you're reading this I'm going to assume you've tackled club accounts and service firms already and so the main things that need to be explained here are the few entries that you'll only find in farm accounts.

Part (a) of the question asks us to work out the capital for the farm on the 1/1. Exactly like with club accounts and service firms, pretty much all we need to do is look at the opening balances at the top of the question and separate them into assets and liabilities.

So the assets are: Land and Buildings - €290,000, Machinery €60,000, Cattle €60,000 (because this is the value of cattle we currently own – in other words an asset), Milk Cheque Due €2,400 (because this means we are owed money for milk we've produced), Stock of fuel €800, and Sheep €18,000 (because this is the value of sheep we currently own – in other words an asset).

And the liabilities are: Electricity due €400.

Other than that there's only three sneaky things to remember and luckily two of them are the exact same two things you have to remember in club accounts:

First there's the opening balance in the T-Account of €2,800, which is telling us how much money we had on the 1/1 and therefore should be in our list of assets on the 1/1.

Second there's the loan and loan interest from the right-hand side of the T-Account. In fairness if you look at the T-Account entry for the loan you'll see that it's worded in a weird way, but it's not too hard to work out. Basically you need to remember that what we're trying to clarify here is how much we owed on the 1st of January (or in accounting jargon, what our 'liability' was on that date). The reason we know that we definitely owed something on the 1/1 is that the T-Account entry says we paid back the loan on the 30/4 and that it included 18 months interest on it, so therefore we know we took out the loan 18 months previously (i.e. Well before the 1/1). So the two questions we need to ask are:

- How much is the loan?; and
- How much interest would we have owed on the 1/1.



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To work out how much the actual loan was, we just need to look at the info we've been given in the T-Account. It says that we repaid €16,350 and that this is the loan plus 18 months interest at 6%. What we know then is that we've incurred 1½ years of interest and that if it's 6% interest a year, there's been 9% interest added to the loan so far (because if the bank charges 6% for one year, the charge to date will have reached 9% if another half a year has passed by). In other words the €16,350 is the loan plus 9% interest, or if it makes sense €16,350 = 109% of the loan. So to know how much the loan is we just divide €16,350 by 109 and then multiply by 100 to get €15,000 – Brilliant!

Now that we know that the loan was €15,000, the interest we paid back must have been €1,350 (€16,350 - €15,000). The really important thing here is the date we paid back the loan (the 30/4). This is telling us that we paid back the loan after four months of this year, but remember we want to know how much we would have owed on the 1/1 – i.e. Four months previously. So if €1,350 is 18 months interest and this includes 4 months after the 1/1, all we need to do is take four months of interest off this. How do we do that? Just divide the 18 months interest by 18 and then multiply by 14 to get €1,050 – Easy!

Lastly, there's one other asset that we had on the 1/1 that's kind of hidden in the question. If you look at the left-hand side of the T-Account (at the very bottom) you'll see an entry for 'interest from investments'. Now obviously we can't get interest from investments unless we have investments and since they're an asset, we should include them in the answer to part (a). The question is how much are the investments? Well if €600 is six months or half a year of interest, then obviously €1,200 would be a full year of interest. And since these are 4% investments, then clearly €1,200 is 4% of the investments. All we do then is divide €1,200 by 4 and multiply by 100 to get the value of the investments: €30,000. Now the answer to part (a) looks like this:

Statement of Capital 1/1

| Assets | € | € |
|--------------------|--------|--------|
| Land and Buildings | 290000 | |
| Machinery | 60000 | |
| Cattle | 60000 | |
| Milk Cheque Due | 2400 | |
| Fuel | 800 | |
| Sheep | 18000 | |
| Bank Balance | 2800 | |
| Investments | 30000 | |
| | 464000 | 464000 |



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| | | |
|-----------------|--------------|--------|
| Liabilities | | |
| Electricity Due | 400 | |
| Loan | 15000 | |
| Loan Interest | <u>1050</u> | |
| | <u>16450</u> | 16450 |
| Capital 1/1 | | 447550 |

Part (B) is asking us to work out the profit the farm made on its cattle and milk section, so what we do is a basic trading and profit and loss account where we put in anything that is connected to cattle and milk. The account will look like this:

Trading and Profit and Loss Account for Cattle and Milk 31/12

| | € | € | € |
|--------------------------|---|----------|----------|
| Sales (of cattle & milk) | | | ? |
| Opening Stock | | ? | |
| Purchases | | ? | |
| Closing Stock | | <u>?</u> | |
| Gross Profit | | <u>?</u> | <u>?</u> |
| Expenses. | | | |
| ? | | ? | |
| ? | | ? | |
| ? | | <u>?</u> | <u>?</u> |
| Net Profit | | | ? |

So what we need to do is find all of these figures and slot them in.



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Sales.

This is the tricky one because it's made up of a lot of smaller numbers. The cattle sales for example are:

€13,000 (from the T-Account) + €5,900 (from the T-Account; NB: Calves count as cattle) + €2,500 (from the T-Account; NB: An EU subsidy counts as cattle sales) = €21,400

The milk sales are:

€28,000 (from the T-Account) - €2,400 (milk cheque due on the 1/1) + €1,800 (milk cheque due on the 31/12) + €700 (milk used by the family – mentioned in note (ii)) = €28,100

The total sales overall therefore are €49,500 (€21,400 + €28,100).

You might have noticed two things in those calculations. First of all we included €700 of milk used by the family when working out the milk sales. A lot of people wonder why this counts as sales when the milk was never in fact sold (and just taken by the family instead). The reason is because when the family take any produce, it's included in sales to show that the goods were actually produced and used by someone. The one thing that should also happen though is that in 'Financed By' section of the Balance Sheet (if we were asked to do one) this €700 of milk taken by the family would be recorded as 'drawings'.

Secondly, you might question how we knew that we add the milk cheque due at the end of the year and subtract the milk cheque due at the beginning of the year. To know about this we need to remember the golden rules that cover all three of these similar topics (club accounts, service firms and farm accounts):

Important Rules:

| <u>Due.</u> | <u>Prepaid.</u> |
|---------------|-----------------|
| 1/1: Subtract | 1/1: Add |
| 31/12: Add | 31/12: Subtract |

| <u>Stock.</u> | <u>Debtors or Creditors.</u> |
|-------------------|------------------------------|
| Opening: Add | 1/1: Subtract |
| Closing: Subtract | 31/12: Add |



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So with the sales figure sorted next we need the opening stock of cattle and milk and thankfully all you have to do for this is look at the opening balances at the start of the question – i.e. Cattle stock is €60,000 and milk stock is zero.

The purchases figure is on the right-hand side of the T-Account where we clearly see cattle purchases of €14,000. There's no mention of calves or obviously of milk (because we don't purchase that, we make it).

With the closing stock figure for cattle (€62,000) at the bottom of the question, we now have the whole trading account completed.

| | | | |
|--------------------------|---|---------------|--------------|
| | € | € | € |
| Sales (of cattle & milk) | | | 49500 |
| Opening Stock | | 60000 | |
| Purchases | | 14000 | |
| Closing Stock | | <u>-62000</u> | |
| | | <u>12000</u> | <u>12000</u> |
| Gross Profit | | | 37500 |

But that's not the ultimate profit on cattle and milk because there are some expenses that we need to take away. If there is no indication that the expenses could be directly related to our cattle and milk section, then we wouldn't take them away and we'd say that the profit was €35,500). In this case however there are some expenses that we know definitely relate to cattle and milk. These are:

Dairy Wages (€1,500). We're just expected to know that the word 'dairy' is related to our production of milk.

General Farm Expenses. Note (iii) tells us to apply 60% of these to cattle and milk. The general farm expenses are €15,000 and so 60% of these are €9,000

Fertiliser. Note (iii) tells us to apply 60% of this to cattle and milk. Fertiliser is €3,000 (from the T-Account) + €400 (from note (vii) – don't forget the important rules in the box above about things being due or prepaid). So 60% of €3,400 is €2,040

Vets Fees and Medicines. Note (iii) tells us to apply 60% of this to cattle and milk. Vets fees are €1,750 (from the T-Account) - €650 (the bit of the vets fees that doesn't relate to the business – see note (vi)). So 60% of €1,100 is €660.



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Now we have the full profit and loss account for cattle and milk:

Trading and Profit and Loss Account – Cattle and Milk 31/12

| | € | € | € |
|--------------------------|---|---------------|--------------|
| Sales (of cattle & milk) | | | 49500 |
| Opening Stock | | 60000 | |
| Purchases | | 14000 | |
| Closing Stock | | <u>-62000</u> | |
| | | <u>12000</u> | <u>12000</u> |
| Gross Profit | | | 37500 |
| Expenses. | | | |
| Dairy Wages | | 1500 | |
| General Expenses | | 9000 | |
| Fertiliser | | 2040 | |
| Vet Fees | | <u>660</u> | |
| | | <u>13200</u> | <u>13200</u> |
| Net Profit | | | 24300 |

You might have noticed that question (B) also asks us to calculate the profit for 'Sheep'. This might seem like a bit of a nightmare, but the good news is that we've already done a lot of the working. If you look at note (iii) for example, all of the expenses that we found out were split 60% for cattle and milk are 40% for sheep. We won't need to put in dairy wages this time (because it has nothing to do with sheep) and other than that it will just be:

General Expenses: €6,000 (40% of €15,000)

Fertiliser: €1,360 (40% of €3,400)

Vet Fees: €440 (40% of €1,100)

The only other figures we'll need will be:



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Sales of sheep: €22,000 (from the T-Account) + €12,600 (lamb sales from the left-hand side of the T-Account) + €3,400 (EU Subsidy – just the same as we did with cattle and milk) + €300 (used by the family in note (ii) – just like we did with cattle and milk) + €1,800 (sales of wool, from the left-hand side of the T-Account) = €40,100

Opening stock: €18,000 (from the opening balances at the top of the question).

Purchases: €19,000 (from the right-hand side of the T-Account).

Closing stock: €25,000 (from the closing balances at the bottom of the question).

So the full trading and profit and loss account for sheep looks like:

Trading and Profit and Loss Account – Sheep 31/12

| | € | € | € |
|--------------------------|---|---------------|--------------|
| Sales (of cattle & milk) | | | 40100 |
| Opening Stock | | 18000 | |
| Purchases | | 19000 | |
| Closing Stock | | <u>-25000</u> | |
| | | <u>12000</u> | <u>12000</u> |
| Gross Profit | | | 28100 |
| Expenses. | | | |
| General Expenses | | 6000 | |
| Fertiliser | | 1360 | |
| Vet Fees | | <u>440</u> | |
| | | <u>7800</u> | <u>7800</u> |
| Net Profit | | | 20300 |



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(C) The last thing we're asked to work out then is the overall profit or loss for the farm. Thankfully we've already dealt with all of the issue relating to cattle and milk and also sheep. None of these things need to be put back in again into the overall profit and loss account – all we need to do instead is put the final profit for each section in and then look for any other item of either income or expenditure that we haven't yet put into any of our answers.

From the left-hand side of the T-Account the items of income that didn't go into either of our accounts in part (B) of the question are:

Forestry Premium and Investment Interest. The forestry premium of €2,100 can just go in as it is because there's no mention of any being due or prepaid at the beginning or end of the year. The investment interest of €600 also goes in but don't forget that we need to add on another €600 to it (because we were told that €600 is half a year of interest and therefore we need to add the other half that would be due to us at the end of the year).

Now we know that the overall income for the farm is:

€24,300 (cattle and milk) + €20,300 (sheep) + €2,100 (forestry premium) + €1,200 (investment income) = €47,900

To see the overall farm expenses we look on the right-hand side of the T-Account and ignore the things we already used when working out the profit on either cattle and milk or sheep. This leaves us with:

Light, Heat and Fuel: The bill for this is €3,400 (from the T-Account) - €400 (due at the start of the year) + €800 (opening stock of fuel at the start of the question) - €900 (closing stock of fuel at the end of the question) = €2,900.

Machinery: This is a fixed asset and so hopefully we'll remember that this shouldn't be recorded as an expense.

Repairs: €6,300.

Loan Interest: If you remember back to part (A) when we worked out the capital, we calculated that €1,050 of the €1,350 loan interest related to the 14 months up to the 1/1. Now what we're interested in is how much of the loan interest relates to this year – i.e. the period of time *after* the 1/1. So if €1,350 is the total interest and €1,050 was charged to us before this year began, then the difference of €300 must be the amount of interest we have been charged for this year.



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A quick scan of the notes at the bottom of the question will tell us that there are two final things we need to do:

First of all note (v) says to work out depreciation on machinery and this is definitely an expense. So it's 10% of €66,500 (that's the machinery we had at the start of the year plus the machinery we bought during the year). That's €6,650

Secondly, note (iv) says that all of the expenses that weren't included in cattle and milk or sheep are to be apportioned 80% to the farm and 20% to the household. This means that only 80% of each expense we just worked out above needs to go in the accounts, because 20% of each of these has nothing to do with the farm. So they each become:

Light, Heat and Fuel: 80% of €2,900 = €2,320

Repairs: 80% of €6,300 = €5,040

Loan Interest: 80% of €300 = €240

Machinery Depreciation: 80% of €6,650 = €5,320

So now the overall profit and loss account for the farm looks like this:

Profit and Loss Account – Kelly Farm 31/12

| | € | € |
|------------------------|--------------|-------|
| Income | | |
| Profit Cattle and Milk | 24300 | |
| Profit Sheep | 20300 | |
| Forestry Premium | 2100 | |
| Investment Income | <u>1200</u> | |
| | <u>47900</u> | 47900 |
| Expenditure | | |
| Light, Heat and Fuel | 2320 | |
| Repairs | 5040 | |
| Loan Interest | 240 | |
| Depreciation | <u>5320</u> | |
| | <u>12920</u> | 12920 |
| Net Profit | | 34980 |



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(D) Finally, there's a bit of a theory question to deal with. We're asked for three reasons why farmers should keep accounts and really it's the same reasons why any kind of business or enterprise should keep accounts:

1. To see if they made a profit or loss for the year.
2. To calculate how much tax they owe.
3. To use for loan or grant applications.

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