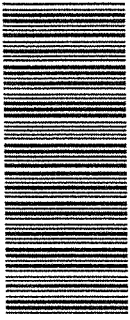


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# higher education & training

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Department:  
Higher Education and Training  
**REPUBLIC OF SOUTH AFRICA**

**N560(E)(J4)H  
JUNE EXAMINATION**

**NATIONAL CERTIFICATE**

**FINANCIAL MANAGEMENT: FARMING N4**

**(4090484)**

**4 June 2013 (X-Paper)  
09:00–12:00**

**Calculators may be used.**

**This question paper consists of 12 pages.**

**DEPARTMENT OF HIGHER EDUCATION AND TRAINING**  
**REPUBLIC OF SOUTH AFRICA**  
NATIONAL CERTIFICATE  
FINANCIAL MANAGEMENT: FARMING N4  
TIME: 3 HOURS  
MARKS: 200

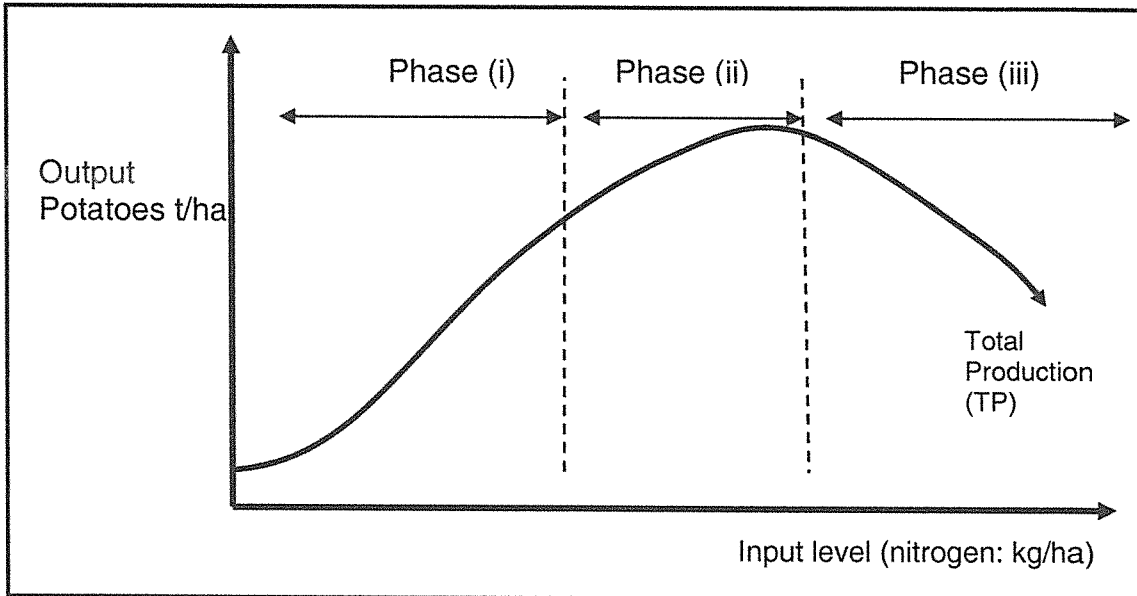
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**INSTRUCTIONS AND INFORMATION**

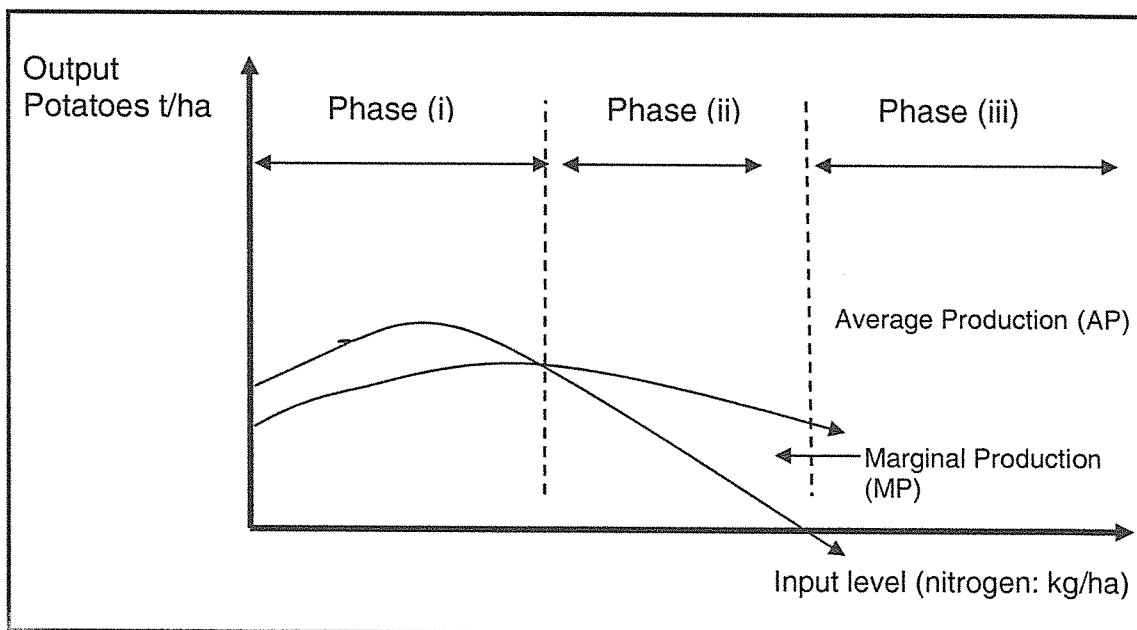
1. Answer ALL the questions.
  2. Read ALL the questions carefully.
  3. Number the answers according to the numbering system used in this question paper.
  4. Rule off across the page on completion of each question.
  5. Start each question on a NEW page.
  6. When doing ALL calculations, insert physical units, for example ha, rand (R), et cetera.
  7. Write neatly and legibly.
-

**QUESTION 1: FINANCIAL MANAGEMENT AND PRINCIPLES OF PRODUCTION ECONOMICS**

- 1.1 The financial function of a farming enterprise is about the flow of funds. Briefly discuss the subdivisions of this function. (3 × 2) (6)
- 1.2 An example of a typical production function is when the production of a product such as potatoes varies as one of the inputs such as nitrogen (N) fertiliser varies while the remainder of the inputs stays constant. The following graphs show an example of this type of production function.



**GRAPH 1**



**GRAPH 2**

Based on GRAPH 1 and GRAPH 2, various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–C) next to the question number (1.2.1–1.2.5) in the ANSWER BOOK.

- 1.2.1 Phase (i) is an irrational phase because the ...
- A production per ha is still too low.
  - B average production is still increasing.
  - C increase in production is increasing too slowly.
- 1.2.2 Phase (iii) is an irrational phase because ...
- A the average production per unit input is decreasing.
  - B the total production is in a declining phase.
  - C the inputs are costing too much.
- 1.2.3 The average production per unit input is calculated by ...
- A the number of units of production  $\div$  number of inputs.
  - B the monetary value of the production  $\div$  number of inputs.
  - C the number of inputs  $\times$  the value per input.
- 1.2.4 The change in production divided by a change in the number of inputs is called the ...
- A marginal cost.
  - B average production.
  - C marginal production.
- 1.2.5 The most profitable level of inputs will be found in phase ...
- A (iii).
  - B (ii).
  - C (i).

(5  $\times$  1) (5)

1.3 The following is information regarding canola production resulting from various levels of nitrogen (N) application. All the remaining inputs stay constant.

- The price of nitrogen is R8,00 per kilogram.
- The price achieved for canola is R2,00 per kilogram.
- The total fixed cost is R1 200,00 per hectare.
- The following table is a part of the production function that indicates the relationship between the varying levels of N and the corresponding changes in canola production:

Levels of input Nitrogen applications (kg/ha)	Total production Canola production in kg/ha
X	Y
10	400
20	910
30	1 350
40	1 710
50	1 990

Calculate the following showing ALL the formulae:

- 1.3.1 The marginal production should the nitrogen application (input) increase from 30 kg to 40 kg/ha (7)
- 1.3.2 The total variable cost at a nitrogen input level of 40 kg/ha (4)
- 1.3.3 The total cost at an application rate of 40 kg nitrogen per hectare (4)
- 1.3.4 The average variable cost per kg canola at an input level of 40 kg nitrogen per hectare (4)
- 1.3.5 The average variable cost per kilogram canola at an application of 40 kg/ha (4)
- 1.3.6 The marginal cost should the application of nitrogen increase from 10 kg/ha to 20 kg/ha (6)

1.4 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (1.4.1–1.4.6) in the ANSWER BOOK.

- 1.4.1 The maximum profit per hectare is only achieved when the production is at maximum potential.
- 1.4.2 The marginal production will continue to increase as more and more units of an input are applied.
- 1.4.3 The greater the number of hectares harvested by a grape harvesting machine, the greater the fixed cost of the grape harvesting machine per hectare.

- 1.4.4 The greater the number of hectares harvested, the lower the variable cost per hectare becomes.
- 1.4.5 Five output/output ratios occur in agriculture. In the case of supplementary products, it is found that a change in the production of one product does not affect the output of the second product.
- 1.4.6 As potatoes and onions can be cultivated on the same piece of land, they are considered to be competitive products.

(6 × 1) (6)

- 1.5 When considering input/input ratios, the substitution ratio occurs between two variable inputs where the one input ( $X_1$ ) increases as the second input ( $X_2$ ) decreases so that the production remains constant.

Name the substitution ratio that is explained in each of the following cases:

- 1.5.1 One input ( $X_1$ ) changes in the same ratio as a second input ( $X_2$ ) to maintain a constant production. (2)
- 1.5.2 Greater quantities of input  $X_2$  are required to replace input  $X_1$  as  $X_1$  decreases and production stays constant. (2)

**[50]**

## QUESTION 2: THE FARM MANAGEMENT INFORMATION SYSTEM (FMIS)

- 2.1 The owner of the farm asks you to make a presentation to Black Empowerment trustees explaining the importance of a farm management information system.

What information would you present to the trustees? (5 × 2) (10)

- 2.2 You have been appointed as an apprentice manager on a farm that has recently been bought. The owner instructs you to set up an inventory for a balance sheet.

In COLUMN A in the following table a number of assets are listed. In COLUMN B a number of possible guidelines to value the assets are given. Choose the answer and write only the letter (A–H) next to the question number (2.2.1–2.2.8) in the ANSWER BOOK.

COLUMN A		COLUMN B	
ASSETS		GUIDELINES TO VALUE ASSETS	
2.2.1	Stock of unsold onions in the store	A	cost price
2.2.2	Vineyard (wine grapes) that is 5 years old	B	estimated current establishment cost depreciated for age
2.2.3	Land	C	current market value
2.2.4	Packing shed of which construction costs are unknown	D	conservative market value
2.2.5	Maize on the land ready to be harvested	E	net sales price
2.2.6	Stock of fertiliser in storage	F	estimated replacement value minus accumulated depreciation
2.2.7	Livestock that has to be slaughtered and sold within the next few days	G	purchase price minus accumulated depreciation
2.2.8	Two-year-old Nuffield tractor with known purchase price	H	estimated production cost

(8 x 1) (8)

- 2.3 Briefly discuss THREE important requirements that a farm management information system must comply with to function successfully. (3 x 2) (6)
- 2.4 Name the TWO basic objectives of calculating depreciation and depreciating assets. (2 x 2) (4)

- 2.5 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (2.5.1–2.5.5) in the ANSWER BOOK.
- 2.5.1 An inventory sets out the tangible assets of a farming enterprise including such assets as cash and investments with the corresponding monetary (rand) values of the assets.
- 2.5.2 If a farmer knows the monetary (rand) value of the production along with the corresponding costs, he/she is then able to determine the profitability and eventually the growth in net value.
- 2.5.3 Commercial livestock (slaughter) are regarded as moveable assets.
- 2.5.4 One advantage of a balance sheet is that one farming enterprise can be compared directly with another farm in the same area.
- 2.5.5 According to the straight-line method of depreciation a fixed amount of depreciation is calculated annually. (5 x 1) (5)
- 2.6 You work for a farming enterprise that uses the declining balance method to determine the depreciation on the tractors. The enterprise bought a neighbouring farm and the enterprise's financial manager asks you to assist in determining the book values of the tractor and implements of this recently bought farm. The financial manager knows that the tractor is 3 years old and that the cost price was R220 000. The farm's policy is that tractors have a useful life of 5 years.
- Calculate the book value of the tractor. Show ALL formulae and calculations. (7)
- 2.7 Assume the following information regarding a spray machine that has been bought:
- |  |          |
|--|----------|
| Cost price of the spray machine            | R150 000 |
| Estimated salvage value                    | R 30 000 |
| Estimated useful life of the spray machine | 6 years  |
- Do the following calculations showing All the formulae and units:
- 2.7.1 What would be the annual depreciation amount if the straight-line method of depreciation is used? (4)
- 2.7.2 Assume the useful life of the spray machine is 10 000 hours and the current year's usage is 2 000 hours, what would the depreciation amount be if the use method of depreciation is used? (4)
- 2.7.3 In the determination of depreciation using the diminishing balance method, the depreciation rate represented by the letter R is used. Explain how R would be calculated. (2)

[50]



**QUESTION 3: THE FARMING BALANCE SHEET**

A neighbouring farmer supplies the following information regarding his/her farm to you so that you can draw up a balance sheet for him/her. Use the following list of information for a particular year at a given date to answer the questions.

- Lambs slaughtered for the labourers during the year
- Value of the leased (rented) land
- Stock of production items
- Diesel used throughout the year
- Value of own land
- Products sold throughout the year
- Favourable bank balance at Nedbank
- Bond at Landbank for land purchased
- Overdraft account at Standard Bank
- Outstanding account at KaapAgri Agricultural Co-operation
- Interest outstanding on previous year's account at KaapAgri
- Balance of instalment sale at ABSA Bank
- Shares at cost price in Stoffhoek Co-operative Wine Cellars
- Tools and implements at market value
- School fees paid for two children
- Value of stud cattle
- Commercial lambs ready for marketing
- Electricity account paid in advance
- Vehicles at market value
- Holiday house at Struisbaai
- Cheques received for commercial lambs sold but not yet banked
- Debtors
- Creditors

- 3.1 Write down the above information under the suitable headings of the balance sheet that appears in QUESTIONS 3.1.1–3.1.7.

NOTE: A negative mark will be awarded for an incorrect entry.

- 3.1.1 Current liabilities
- 3.1.2 Medium-term liabilities
- 3.1.3 Long-term liabilities
- 3.1.4 Current assets
- 3.1.5 Investments
- 3.1.6 Moveable assets
- 3.1.7 Fixed assets

(32)

- 3.2 Distinguish between the following terms and in each case explain what is meant by each term. Examples may be given to illustrate the meaning/difference.
- 3.2.1 Total assets and total capital applied (4)
- 3.2.2 Foreign capital and debt (4)
- 3.2.3 Financing structure and financial structure (4)
- 3.3 Explain what is meant by the term *net current assets*. (2)
- 3.4 Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–C) next to the question number (3.4.1–3.4.4) in the ANSWER BOOK.
- 3.4.1 In the case of a solvent farming enterprise the value of the assets will be ...
- A greater than the total debt.  
B less than the value of the liabilities.  
C greater than the net value. (1)
- 3.4.2 In the balance sheet of a farming enterprise the assets are always ... the liabilities.
- A greater than  
B equal to  
C a different value to (1)
- 3.4.3 Moveable assets may be defined as assets that ...
- A are used to produce other assets.  
B depreciate rapidly.  
C are purchased with the purpose of selling them later at a profit. (1)
- 3.4.4 The total capital applied in a farming enterprise refers to the ...
- A total assets of the farming enterprise.  
B owner's interest.  
C value of the enterprise's assets plus the value of leased land. (1)

**[50]**

**QUESTION 4: THE INCOME STATEMENT**

The following information from a certain financial year is for a farming operation that farms with lucerne and with sheep:

	<b>R</b>
Sheep slaughtered for domestic use	4 000
Sheep sold – money not received yet	140 000
Ewes bought on credit from breeder	10 000
Value of sheep stolen throughout the year	20 000
Sheep slaughtered for labourers' rations	3 000
Value of sheep at START of year	160 000
Value of sheep at year END	120 000
Bales of lucerne fed to sheep	12 000
Sale of wool to BKB	30 000
Feed purchased for sheep	4 000
Bales of lucerne sold	180 000
Insurance payment for lucerne haystack that burnt out	20 000
Stock of unsold wool at year END	10 000
Wages paid to shearers	2 000
Wages of permanent labourers	48 000
Veterinary stock	4 000
Baling material for lucerne	6 000
Stock of fuel: START of year	4 000
END of year	2 000
Purchases during the year	22 000
Interest on loans at Landbank	30 000
School fees for children paid	4 000
Depreciation on improvements and equipment	32 000
Other (sundry) farming expenses	28 000
Rental of neighbour's land	70 000
Value of all assets at year END	1 200 000
Total debt at year END	140 000

Calculate the following showing calculations and formulae where applicable:

- |     |   |      |
|-----|---|------|
| 4.1 | The gross production value for the sheep branch                       | (9)  |
| 4.2 | The gross production value for the lucerne branch                     | (4)  |
| 4.3 | The gross production value for the farm as a whole                    | (1)  |
| 4.4 | The cost of labour for the year                                       | (4)  |
| 4.5 | Cost of fuel for the year   | (4)  |
| 4.6 | The total production, marketing and administrative costs for the year | (10) |

4.7	4.7.1	The net farm income (NFI) (show formula)	(4)
	4.7.2	Explain what <i>net farm income</i> means.	(2)
4.8	4.8.1	The farm profit	(6)
	4.8.2	What does farm profit represent?	(2)
4.9		Net value of the farm as at the end of the year	(4)
			<b>[50]</b>

**TOTAL: 200**



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**REPUBLIC OF SOUTH AFRICA**

## **MARKING GUIDELINE**

**NATIONAL CERTIFICATE  
JUNE EXAMINATION  
FINANCIAL MANAGEMENT: FARMING N4**

**4 JUNE 2013**

**This marking guideline consists of 8 pages.**

**QUESTION 1**

- 1.1
- Financing which is the procurement of funds√√
  - Investment which is the application of funds to obtain assets√√
  - The administration and reporting on financial matters√√
- (6)
- 1.2
- |       |    |
|-------|----|
| 1.2.1 | B√ |
| 1.2.2 | A√ |
| 1.2.3 | B√ |
| 1.2.4 | C√ |
| 1.2.5 | B√ |
- (5)
- 1.3
- 1.3.1
- Marginal production =  $\frac{\Delta \text{Total production}}{\Delta \text{Inputs}}$  √√
- =  $\frac{(1\,710 - 1\,350) \text{ kg/ha}}{(40 - 30) \text{ kg/ha}}$  √√√√ (no units minus 1)
- =  $\frac{360 \text{ kg/ha}}{10 \text{ kg/ha}}$
- = 36 kg/ha√ (no units minus 1)
- (7)
- 1.3.2
- Total variable cost = Input x Unit price√
- = 40 kg/ha x R8/kg√√ (no units minus 1)
- = R320/ha√ (no units minus 1)
- (4)
- 1.3.3
- Total cost = total variable cost + total fixed cost√√
- = R320/ha + R1 200,00/ha√
- = R1 520,00/ha√ (units)
- (4)
- 1.3.4
- Average variable cost per kg canola
- =  $\frac{\text{Variable cost}}{\text{Units produced}}$  √√
- =  $\frac{R320/ha}{1\,710 \text{ kg/ha}}$  √
- = R0,19/kg canola√ (units)
- (4)



- 2.2      2.2.1      E✓  
             2.2.2      B✓  
             2.2.3      D✓  
             2.2.4      F✓  
             2.2.5      H✓  
             2.2.6      A✓  
             2.2.7      C✓  
             2.2.8      G✓
- (8)
- 2.3      • It must be simple and easy to use but at the same time it must be comprehensive enough✓  
             • Any system must be used (utilised) to be of value, in other words if data is collected the information generated needs to be utilised✓✓  
             • The person using the FMIS must have sufficient knowledge to process the information, interpret it and make sound decisions (*or similar wording*)✓✓  
(3 × 2) (6)
- 2.4      • To recover the cost of an asset over its useful life so that its costs can be allocated to the production process every year✓✓  
             • To calculate the annual book value of an asset for balance sheet purposes✓✓ (4)
- 2.5      2.5.1      False✓  
             2.5.2      True✓  
             2.5.3      False✓  
             2.5.4      False✓  
             2.5.5      True✓
- (5)
- 2.6      BV = CP x (1-r)<sup>d</sup> ✓  
             = R220 000,00 x (1 -  $\frac{2}{5}$ )<sup>3</sup> ✓  
             = R220 000,00 x (1 - 0,4)<sup>3</sup> ✓  
             = R220 000,00 x (0,6)<sup>3</sup> ✓  
             = R220 000,00 x (0,6 x 0,6 x 0,6) ✓  
             = R220 000,00 x 0,216 ✓  
             = R47 520 ✓ (*minus 1 mark if rand is omitted*) (7)



- 2.7 2.7.1  $D = \frac{CP - S}{L} \checkmark$   
 $= \frac{(R150\,000 - R30\,000)}{6 \text{ years}} \checkmark$   
 $= \frac{(R120\,000)}{6 \text{ years}} \checkmark$   
 $= R20\,000/\text{year} \checkmark$  (no units minus 1) (4)
- 2.7.2  $D = \frac{(CP - S)}{HU} \times \frac{H}{1} \checkmark$   
 $= \frac{(R150\,000 - R30\,000)}{10\,000 \text{ hours}} \times \frac{2\,000 \text{ hours}}{1} \checkmark$   
 $= \frac{R120\,000}{10\,000 \text{ hours}} \times \frac{2\,000 \text{ hours}}{1} \checkmark$   
 $= R24\,000,00 \checkmark$  (no units minus 1) (4)
- 2.7.3  $R = \frac{2}{L}$  where L is the expected life of the asset  $\checkmark \checkmark$  (2)  
**[50]**

**QUESTION 3****(Minus ONE mark for each incorrect entry.)**

- 3.1 3.1.1 Current liabilities
- Overdraft account at Standard Bank  $\checkmark \checkmark$
  - Outstanding account at KaapAgri Agricultural Co-operation  $\checkmark \checkmark$
  - Interest outstanding on previous year's account at KaapAgri Agricultural Co-operation  $\checkmark \checkmark$
  - Creditors  $\checkmark \checkmark$  (8)
- 3.1.2 Medium-term liabilities
- Balance of instalment sale at ABSA Bank  $\checkmark \checkmark$  (2)
- 3.1.3 Long-term liabilities
- Bond at Landbank for land purchased  $\checkmark \checkmark$  (2)

- 3.1.4 Current Assets
- Stock of production items√√
  - Favourable bank balance at Nedbank√√
  - Commercial lambs ready for marketing√√
  - Electricity account paid in advance√√
  - Debtors√√
- (10)
- 3.1.5 Investments
- Shares at cost price in Stoffhoek Co-operative Wine Cellars√√
- (2)
- 3.1.6 Moveable assets
- Tools and implements at market value√√
  - Value of stud cattle√√
  - Vehicles at market value√√
- (6)
- 3.1.7 Fixed assets
- Value of own land√√
- (2)
- 3.2 3.2.1 Total assets are the sum of Current, moveable and fixed assets and inclusive of investments √√ while total capital applied is the sum of the total assets plus the value of leased (hired) land.√√ (4)
- 3.2.2 Debt is the money owed by the farming enterprise and is equal to liabilities less the owner's interest √√ while foreign capital is seen as the enterprise's debt plus the value of the leased land. If land is not leased then debt is only equal to foreign capital√√ (*or similar wording*). (4)
- 3.2.3 Financing structure also known as capital structure is the combination of interests of the assets of the enterprise (or liabilities)√√. The financial structure refers to the relationship between the types of assets and liabilities√√ (*or similar wording*). (4)
- 3.3 Net current assets is the difference between the values of current assets and current liabilities.√√ (2)
- 3.4 3.4.1 A√
- 3.4.2 B√
- 3.4.3 A√
- 3.4.4 C√
- (4)  
[50]

**QUESTION 4**

4.1 GPV of sheep

		Rand
Sheep slaughtered for domestic use	√	4 000
Sheep sold, cash not yet received	√	140 000
Ewes bought from breeder	√	-10 000
Sheep slaughtered for labourers' rations	√	3 000
Value of sheep at BEGINNING of year	√	-160 000
Value of sheep at year END	√	120 000
Wool sales	√	30 000
Stock unsold wool at year END	√	10 000
	√	<b>137 000</b>

(9)

4.2 GPV of lucerne

		Rand
Lucerne fed to sheep	√	12 000
Lucerne bales sold	√	180 000
Insurance payment – haystack burnt down	√	20 000
	√	<b>212 000</b>

(4)

4.3 GPV for farm as a whole = R349 000 √ (no mark if rand sign is omitted)

(1)

4.4 Cost of labour

		Rand
Sheep slaughtered for labourers' rations	√	3 000
Wages for shearers	√	2 000
Wages of permanent labourers	√	48 000
	√	<b>53 000</b>

(4)

4.5 Cost of fuel

		Rand
Opening stock	√	4 000
Closing stock	√	-2 000
Purchases during the year	√	22 000
	√	<b>24 000</b>

(4)

## 4.6 Farm expenses (production, marketing and administrative costs)

		Rand	Rand
Feed:			
Purchases	√	4 000	
Own bales	√√	12 000	16 000
Veterinary stock	√		4 000
Baling material	√		6 000
Fuel	√		24 000
Cost of labour	√		53 000
Depreciation	√		32 000
Other (sundry) expenses	√		28 000
	√		<b>163 000</b>

(10)

- 4.7 4.7.1 Net farm income (NFI) = GPV (total) – production, marketing and administrative costs√√  
= R349 000 – R163 000√  
= R186 000√ (minus mark if R omitted) (4)
- 4.7.2 NFI is the GPV less the production, marketing and administrative costs that are incurred to deliver gross production and from it the suppliers of foreign capital are remunerated (or similar wording).√√ (2)
- 4.8 4.8.1 Farming profit (FP) = NFI – remuneration to suppliers: foreign capital √  
= NFI – (interest + rent)√√  
= R186 000 – (R30 000 + R70 000)√√  
= R86 000√ (minus mark if R omitted) (6)
- 4.8.2 Farming profit is the value that is available for remuneration of own labour, rewarding of own capital and entrepreneurship. If the value is negative, then it represents a farming loss (or similar wording).√√ (2)
- 4.9 Net value = total assets – total debt√√  
= R1 200 000 – R140 000√  
= R1 060 000√ (minus mark if R omitted) (4)

[50]

**TOTAL: 200**