Agricultural Sciences
Know the method.

GRADE 12 • 2026 • DBE/CAPS

Free starter pack

3 worked methods • 3 practice questions • explained answers

Read the production context, identify the biological or economic principle and show units in every calculation. Explain cause and consequence when recommending a management action.

Use this pack actively

1. Choose a method from the clickable index. Try the worked question before reading its steps.

2. Complete Your turn, then follow its answer link. Correct your first error and retry without copying.

3. Mix methods and use complete official papers to practise unfamiliar contexts and time management.

Paper 1 is BLUE; Paper 2 is PURPLE. Written labels remain useful in grayscale.

Original practice, not reproduced or predicted DBE exam questions. The fuller pack supports the R99 offer. Editorial draft: independent subject-teacher moderation is still required. Selected core methods do not replace the full syllabus, practical preparation or PAT.

Question-method index

Click a method to open it. Each practice question links to its explained answer.

Paper 1

MR-AGR-01 | Ruminant digestion • p. 4

MR-AGR-03 | Pearson square feed mixture • p. 5

Paper 2

MR-AGR-09 | Gross margin versus profit • p. 6

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Your examination map

Paper 1 • 150 min • 150 marks

Animal nutrition; animal production, protection and control; animal reproduction.

Paper 2 • 150 min • 150 marks

Agricultural management and marketing; production factors; basic agricultural genetics.

Plan time from the actual instructions

Paper 1: reserving 15 minutes leaves about 0.90 minutes per mark. Use this only as a planning guide.

Paper 2: reserving 15 minutes leaves about 0.90 minutes per mark. Use this only as a planning guide.

What still needs practice

Extend to detailed digestive and reproductive anatomy, feed energy calculations, livestock disease case studies, breeding technologies and complete farm-business records.

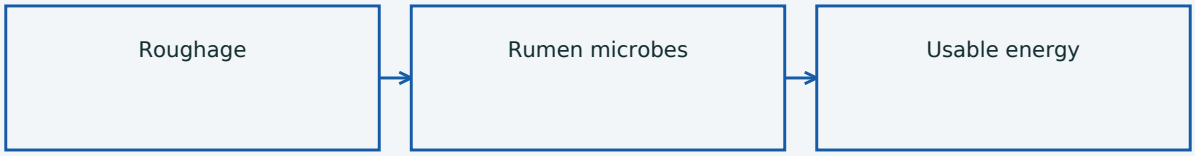
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Ruminant digestion

MR-AGR-01 • Link the compartment to its function.

Worked question

Explain how a cow can use cellulose-rich roughage better than a simple-stomached animal.



Original method sketch; schematic unless stated. Use the given values, not measurements from this image.

1. The rumen houses microorganisms that ferment cellulose.
2. Fermentation produces volatile fatty acids that provide usable energy.
3. Rumination returns feed for further chewing, reducing particle size.
4. The animal relies on microbial action; it does not produce its own cellulase for this process.

Check the reasoning

Structure, microbes and useful products are linked.

Avoid this mistake

Do not say cellulose is digested mainly by enzymes secreted by the rumen wall.

Your turn

Why does chewing the cud help roughage utilisation?

Click here for the explained practice answer.

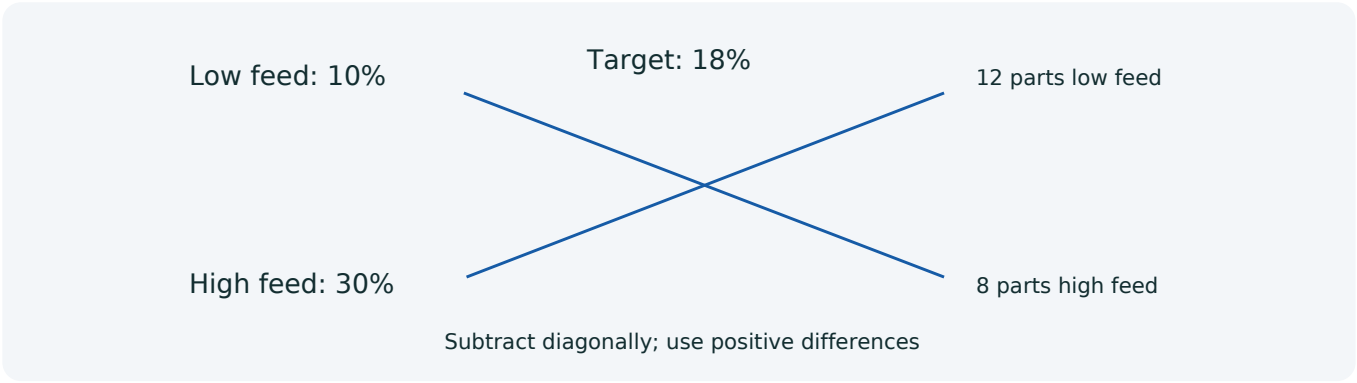
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Pearson square feed mixture

MR-AGR-03 • Subtract diagonally and use the parts in the right order.

Worked question

Mix feeds containing 10% and 30% crude protein to obtain 100 kg at 18%. Use the Pearson-square method.



Original method sketch; schematic unless stated. Use the given values, not measurements from this image.

1. Low-protein feed parts: $30 - 18 = 12$.

2. High-protein feed parts: $18 - 10 = 8$.

3. Total parts: $12 + 8 = 20$.

4. Low feed: $\frac{12}{20} \times 100 = 60$ kg. High feed: $\frac{8}{20} \times 100 = 40$ kg.

5. Check protein: $60 \times 0.10 + 40 \times 0.30 = 18$ kg in 100 kg.

Check the reasoning

The desired percentage must lie between the two feed percentages.

Avoid this mistake

Do not attach each difference to the wrong feed.

Your turn

Mix 12% and 32% feeds to obtain 200 kg at 20%. Find each mass.

Click here for the explained practice answer.

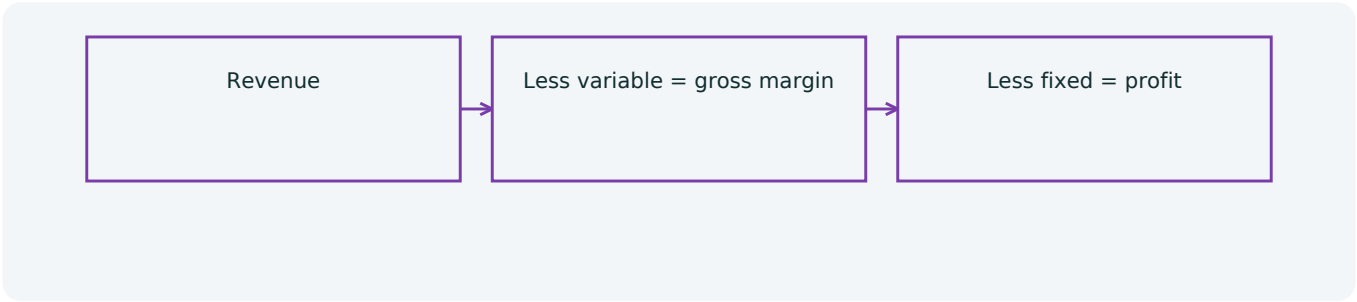
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Gross margin versus profit

MR-AGR-09 • Exclude fixed costs from gross margin.

Worked question

A crop earns R180000. Variable costs are R110000 and allocated fixed costs R40000. Calculate gross margin and enterprise profit on these figures.



Original method sketch; schematic unless stated. Use the given values, not measurements from this image.

1. Gross margin: 180000 – 110000 = R70000.
2. Profit after the stated fixed costs: 70000 – 40000 = R30000.
3. Gross margin helps compare contributions before fixed costs.
4. Check that cost classifications and output periods match.

Check the reasoning

Profit is lower because it includes the stated fixed costs.

Avoid this mistake

Do not call gross margin final net profit.

Your turn

Revenue R240000, variable costs R150000, fixed costs R60000. Calculate.

Click here for the explained practice answer.

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Ruminant digestion

MR-AGR-01 • Practice answer

Why does chewing the cud help roughage utilisation?

Step-by-step answer

1. Repeated chewing reduces particle size.

2. This increases surface area for microbial action.

3. Saliva also helps maintain a suitable rumen environment.

Make the correction useful

Explain your first missed step, correct it and repeat the task without copying. For practical tasks, inspect the saved result rather than only reading the solution.

Return to the worked method

Pearson square feed mixture

MR-AGR-03 • Practice answer

Mix 12% and 32% feeds to obtain 200 kg at 20%. Find each mass.

Step-by-step answer

1. Low-feed parts $32 - 20 = 12$; high-feed parts $20 - 12 = 8$.

2. Low feed 120 kg, high feed 80 kg.

3. Protein: $14.4 + 25.6 = 40$ kg; $\frac{40}{200} = 20\%$.

Make the correction useful

Explain your first missed step, correct it and repeat the task without copying. For practical tasks, inspect the saved result rather than only reading the solution.

Return to the worked method

Gross margin versus profit

MR-AGR-09 • Practice answer

Revenue R240000, variable costs R150000, fixed costs R60000. Calculate.

Step-by-step answer

1. Gross margin R90000.

2. Profit R30000.

Make the correction useful

Explain your first missed step, correct it and repeat the task without copying. For practical tasks, inspect the saved result rather than only reading the solution.

Return to the worked method

Continue with official papers

Scope checked 9 October 2026. The source links support the assessment map; all worked and practice questions in this pack are newly authored.

Subject examination guideline

2026 ATP retention and CAT / IT update exceptions

2021 guideline extension through 2026

DBE annual teaching plans

DBE released 2026 papers and marking guidelines

Error log

Question ID: _____ Date: _____
First incorrect step: _____
Why it failed: _____
Correct method: _____
Retry date and result: _____

Use the matching memo, answer book and addenda for the actual paper. Questions here have no official mark allocation. Check explanations with your teacher before using these drafts as a sole revision source.

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