AAE 320 Farming Systems Management

Exam # 1 Review

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Goal

- Explain what to expect for exam
- Overview topics on exam
- Give idea of how to study

Exam #1: Monday October 17 In Class

- What to Expect
- Organization & format similar to previous exams
    - Mostly problems testing your knowledge of major concepts via mathematics
    - Other questions: true false and/or short answer,
    - Look at previous exams on the class page for example format and questions
- 2020 exam was take-home, so longer than in-class exam
- All others were in-class

Exam #1

- **Three types of Problems/Questions**
- **1. Quantitative Questions (math problems to work out)**
  - Think breaks, problem sets, examples, old exams
  - Examples in class
- **2. Context questions on Quantitative Questions**
  - Give very short written answers
  - Example: interpret your partial budget result

Exam #1

- **3. Non-Quantitative Questions**
  - Write a <u>few</u> sentences: The space provided will guide you on how much to write, no need to write a bunch
  - Questions about the materials and issues we discussed in class
    - Readings, videos, small groups, discussion sheets, …
    - Basic terms used in problem sets: cover crop, cow-calf operation, heifer vs cow, seed treatment, types of fertilizer, input substitution, …

Topics Covered

- Introduction
  - Overview of Wisconsin Agriculture
    - 2 part video, PowerPoint
  - U.S. Food System
    - 1 video, PowerPoint, Discussion Assignment #1
- Production Economics
  - Quantitative Topics
  - Non-Quantitative Topics

Production Economics

- **Partial Budget Analysis**
  - 1 video and PowerPoint
  - Think Break #1
  - Problem Set #1
- **Partial Budget Examples**
  - 1 video, PowerPoint, and PowerPoint with answers

Production Economics

- Single Input Production Economics
  - Focus on optimal input use when choosing 1 input
    - Production function, marginal product, average product
    - VMP = r identifies the optimal input use
    - Table form or using Calculus
  - 3-part video and PowerPoint
  - Think Breaks #2 to #5
  - Problem Set #2
- Single Input Production Examples
  - PowerPoint and PowerPoint with answers

Production Economics

- **Multiple Input Production Economics**
  - Focus on optimal input use when choosing 2 inputs
    - Equal margin principle: MRTS = MPx/Mpy = $- \Delta Y / \Delta X = r_x / r_y$
    - Isoquants, Tradeoff curves, input substitution,
    - Table form or using Calculus: how to find optimal inputs
  - 3-part video and PowerPoint
  - Think Breaks #6 to #8
  - Problem Set #3
- Multiple Input Production Examples
  - PowerPoint and PowerPoint with answers

Production Economics

- Minor Topics covered along the way
- Linear Interpolation
  - <u>Will not need to use the formula</u>
  - If you need to interpolate, it will be simple, calculate the average of two entries
- Units conversion
  - <u>Expect a separate question</u>: $/ton of fertilizer that XX% N: what's the N price. Will not need to do it for calculus

Production Economics Non-Quantitative Topics

- Nitrogen in Agriculture
  - 4 videos/readings, class discussion
  - Discussion Assignment sheet #2
  - Class lecture with PowerPoint

- The More-On Principle
  - Video, additional follow-up to N in ag
- Economics of Cost
  - 3 videos, plus class time
- Inelasticity in Agriculture
  - Video, plus class time

How to Study/Prepare

- Know the Think Breaks and Problem Sets and how to work these types of problems
- Read over or do the old exams
  - There are differences in the material covered
- Exam will mostly be quantitative, focused on the optimality conditions and their use to make decisions on input(s)/output
- Expect more on the special topics lectures than in years past: we spent more time on than in previous years
- Email/call me with questions