Public Economics

Lec 2: Equity, efficiency and welfare economics

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AM's reminders

- **"Home assignments"**
- **Deadline for essay**
  - March 6^{th} (Sunday), midnight
  - Details will follow (next lecture)
  - **Suggestion:** form the groups (3 people) ASAP

Today's reading list

- **Rosen & Gayer** ch. 3

Welfare economics

Tool to evaluate public policies: desiderable outcome

- Normative analysis

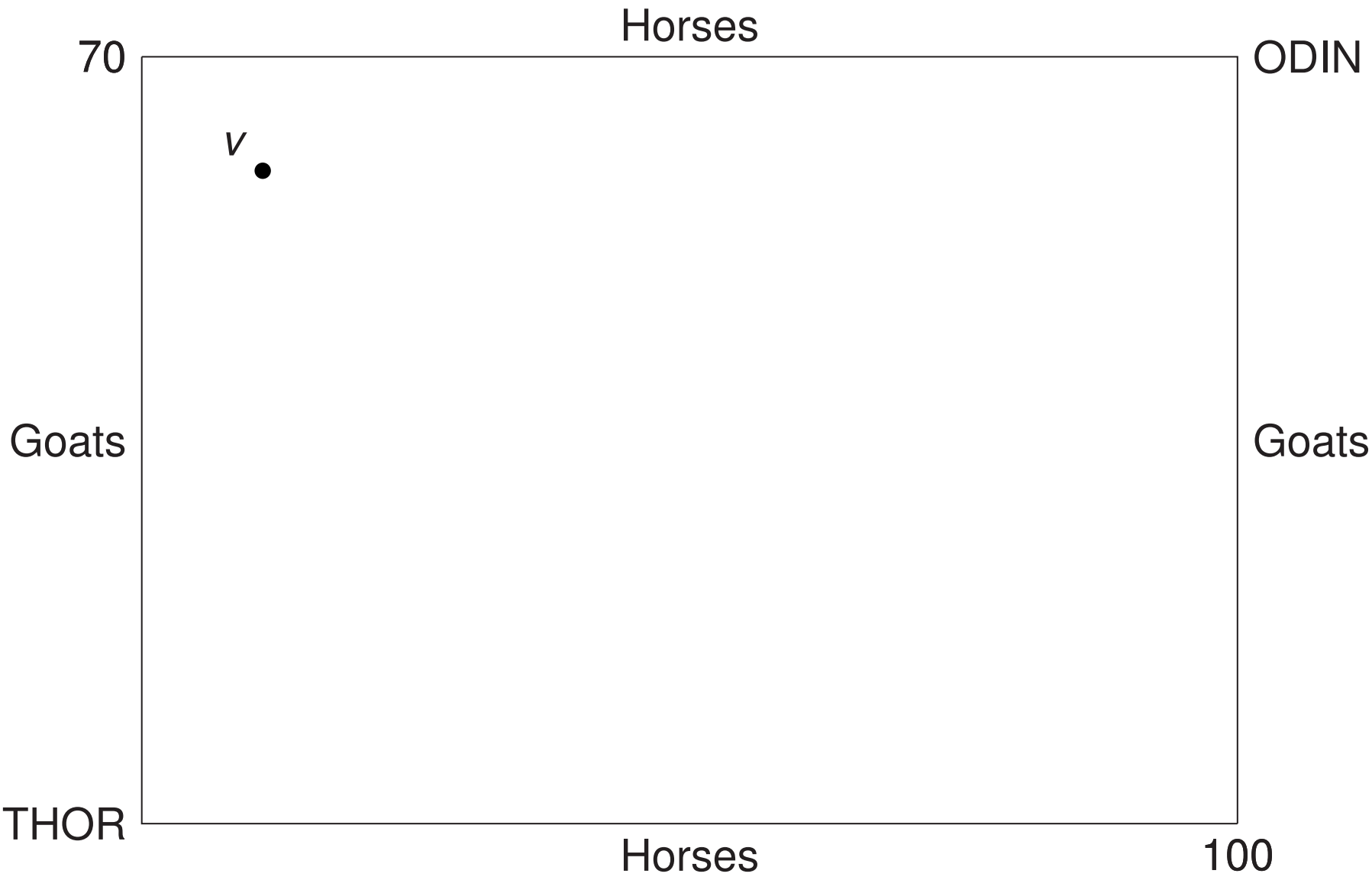
1. **Define the target**
   - Individual utility as criterion
   - Efficiency, equity, a combination of the two?
2. **Evaluate impact of intervention**
3. **Weight it according to preferences**

First criterion: efficiency

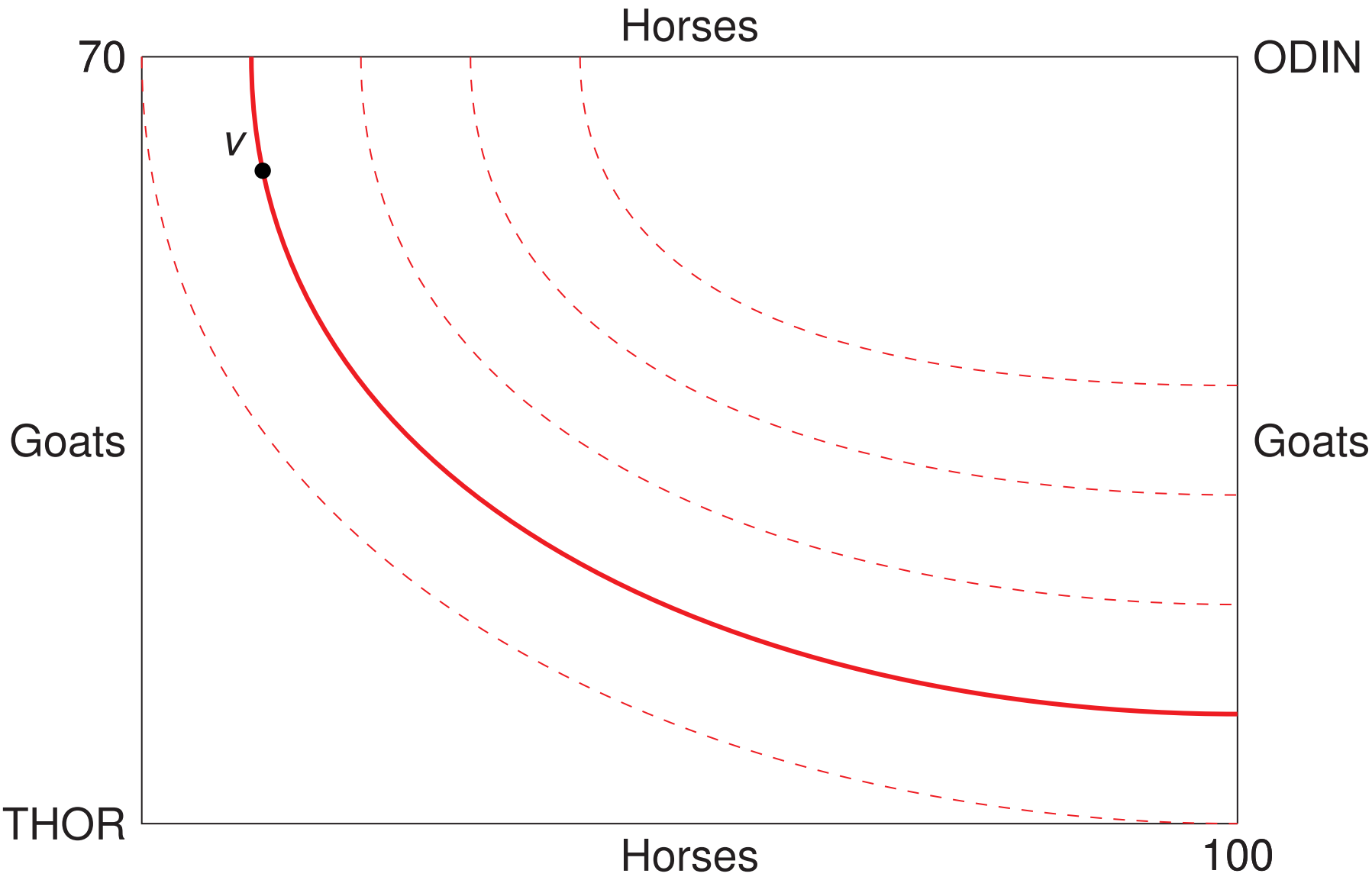
Benchmark

- Efficient **consumption**
- Efficient **production**

Efficient consumption: **Edgeworth box**



Efficient consumption: **Edgeworth box**



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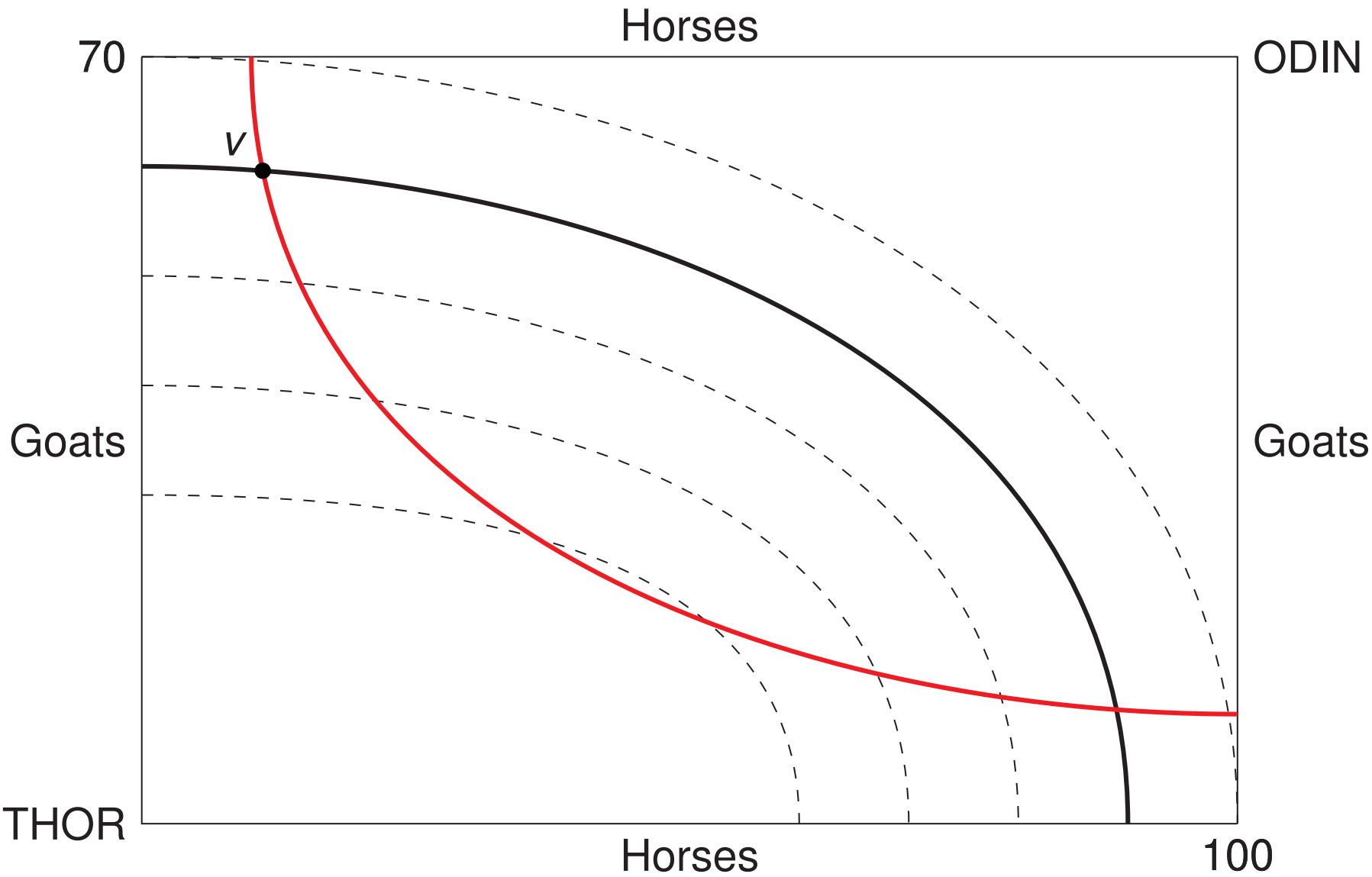

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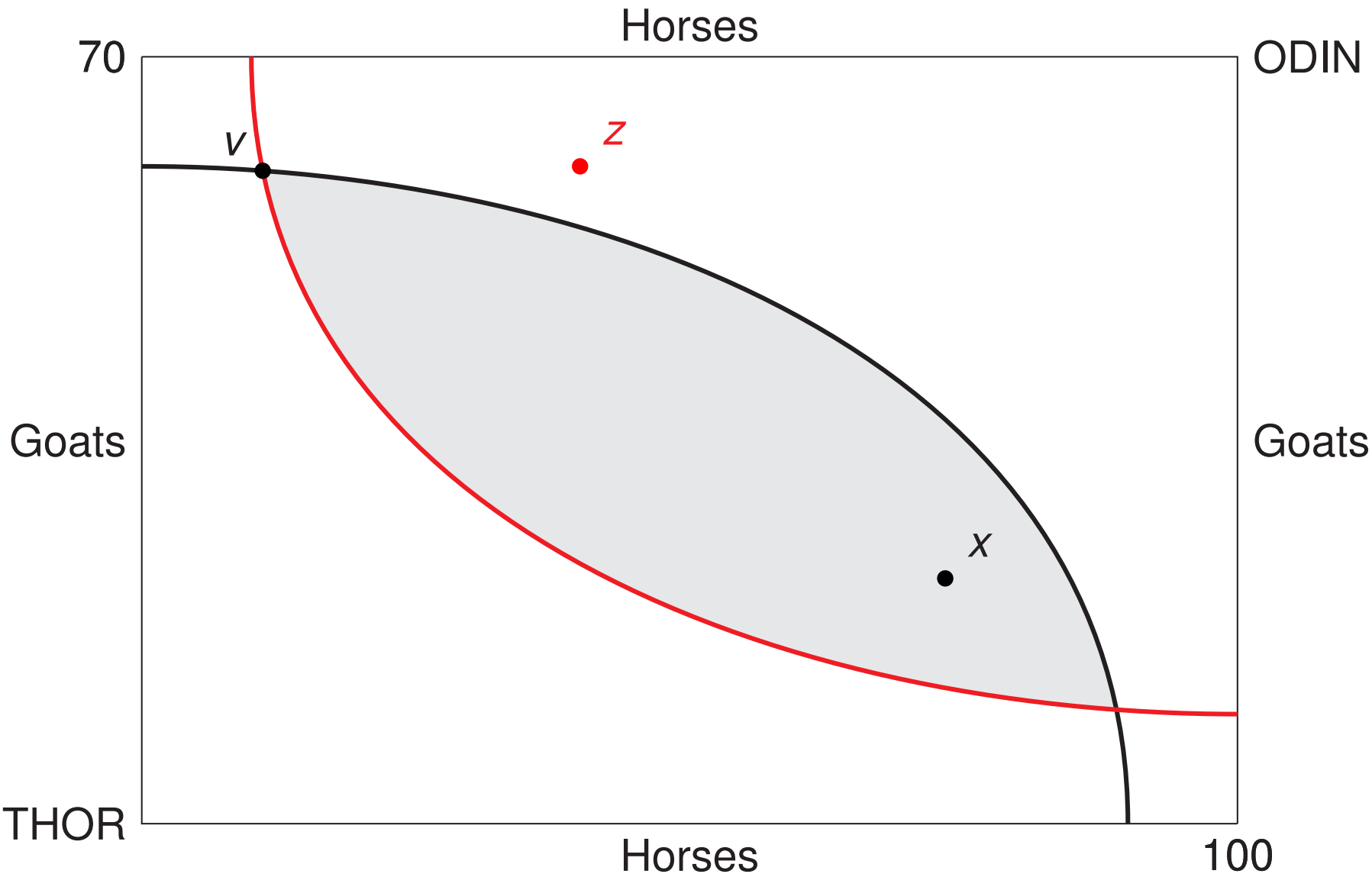

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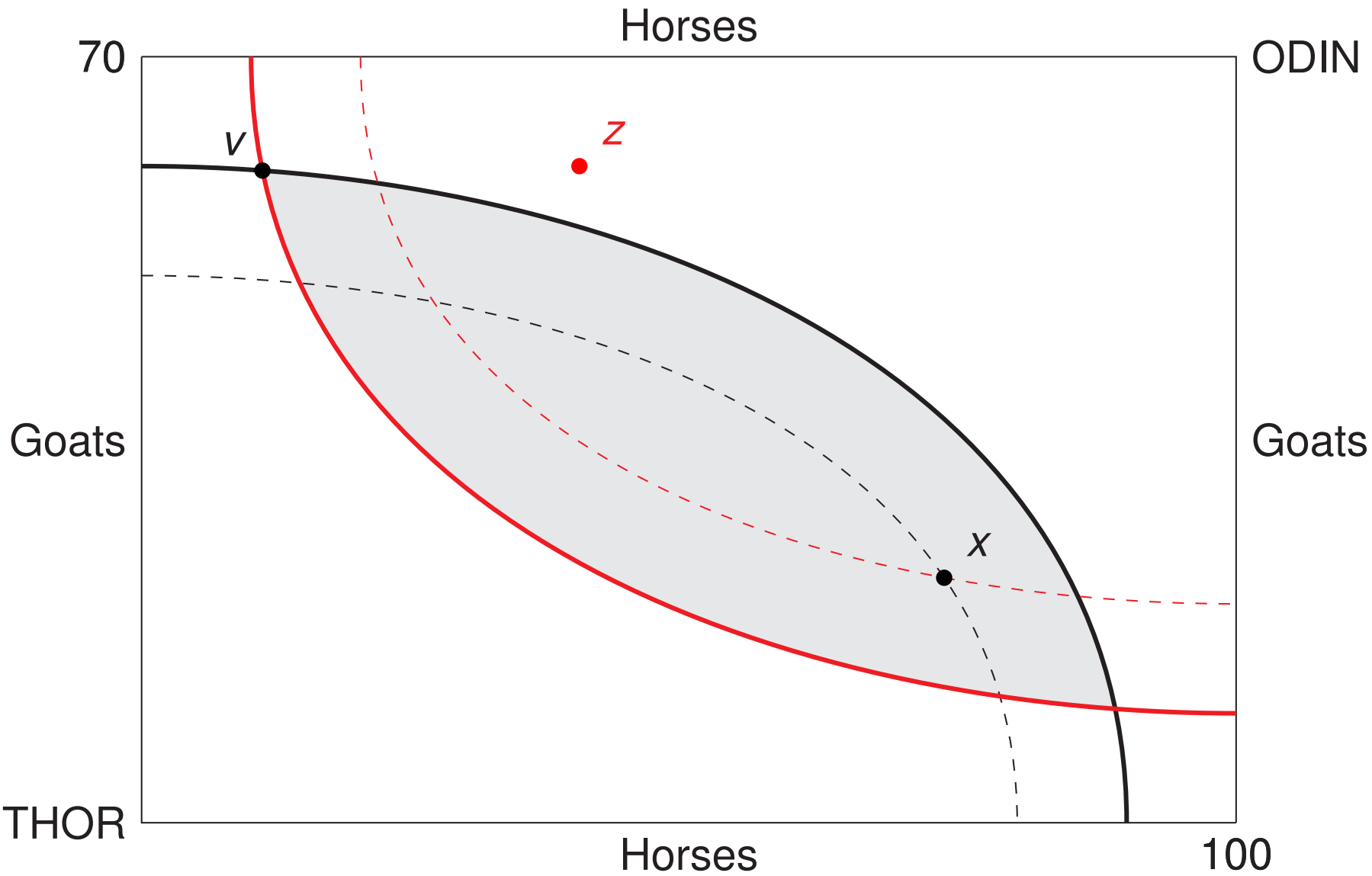

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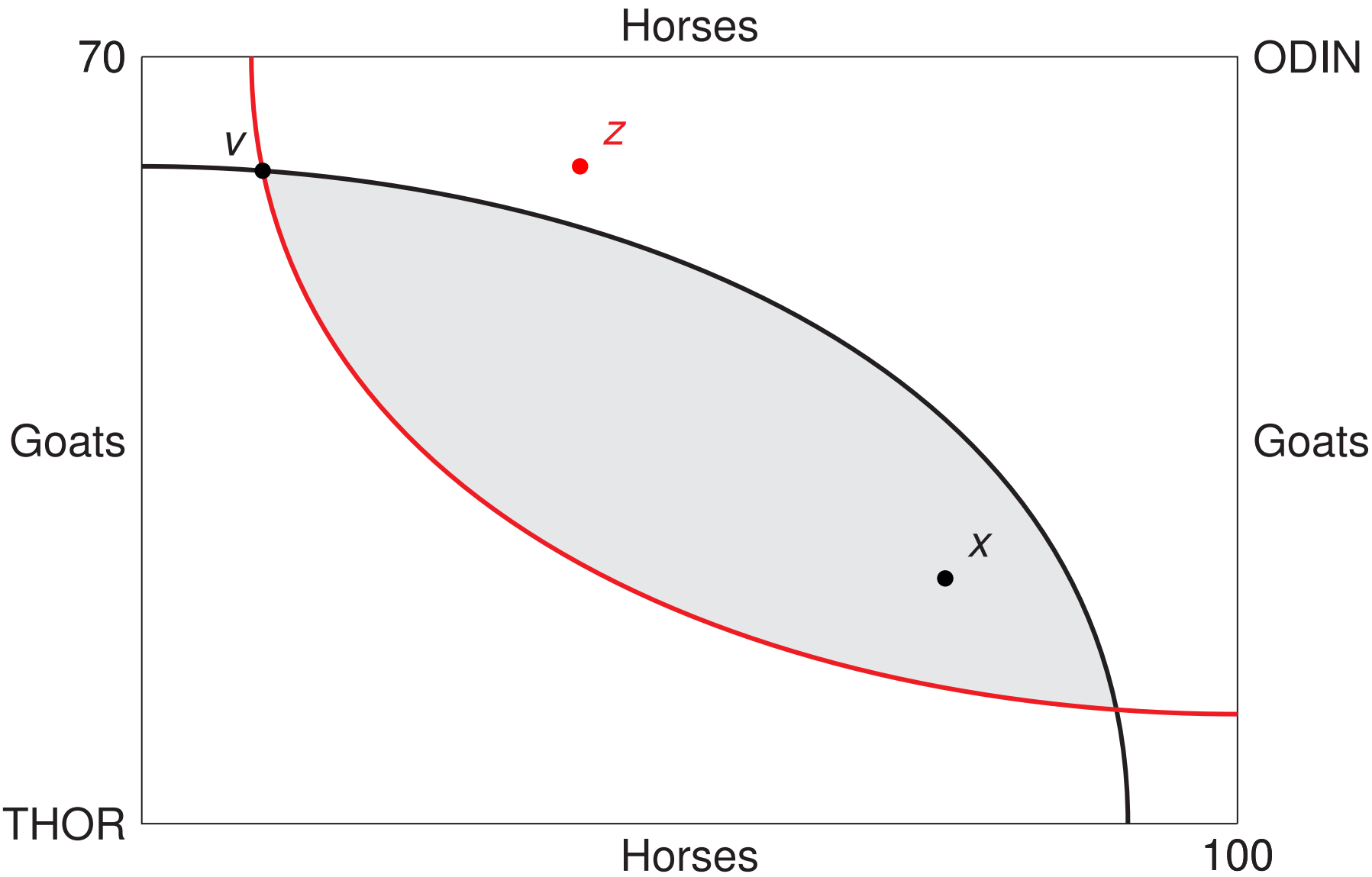

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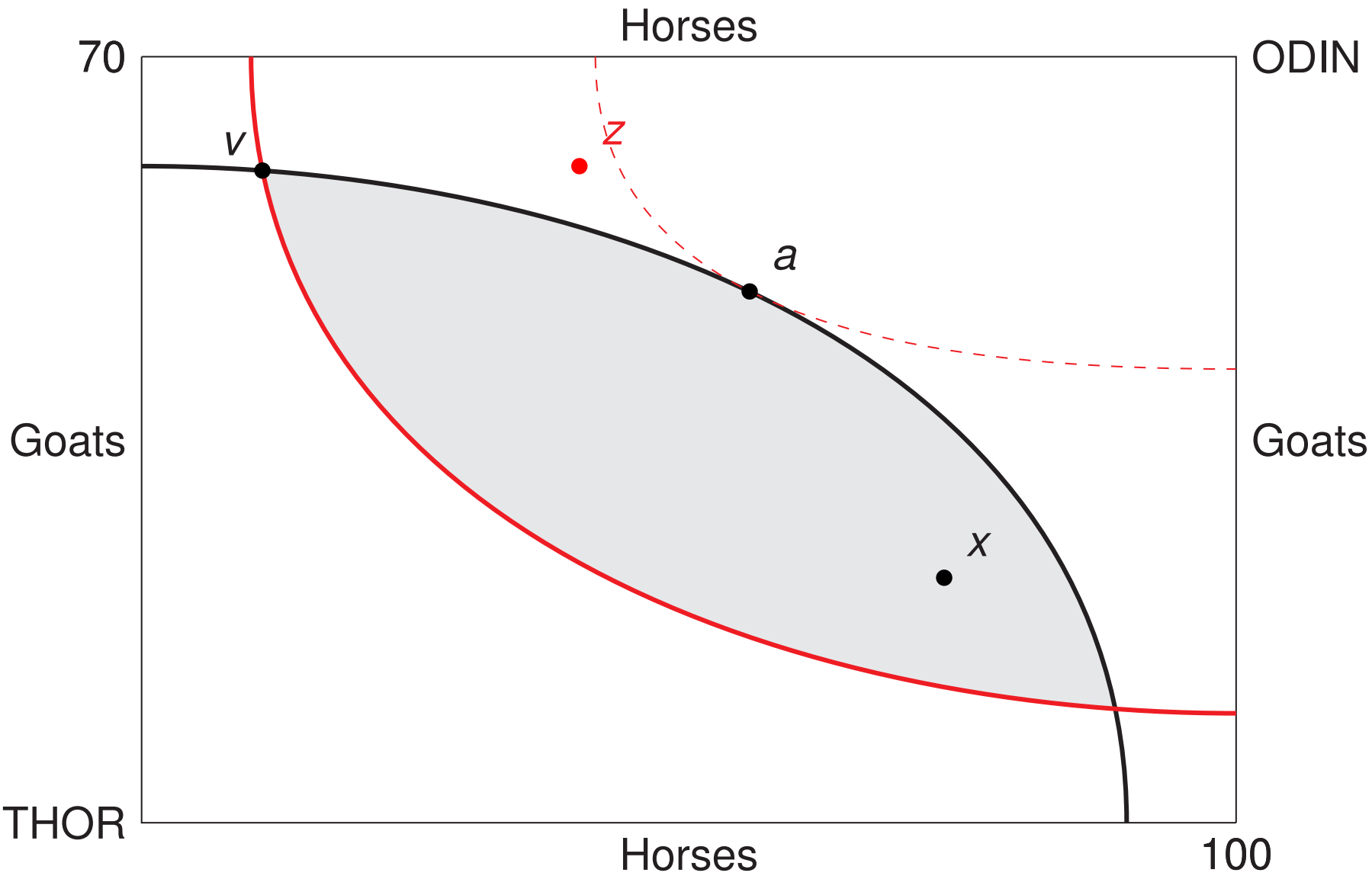

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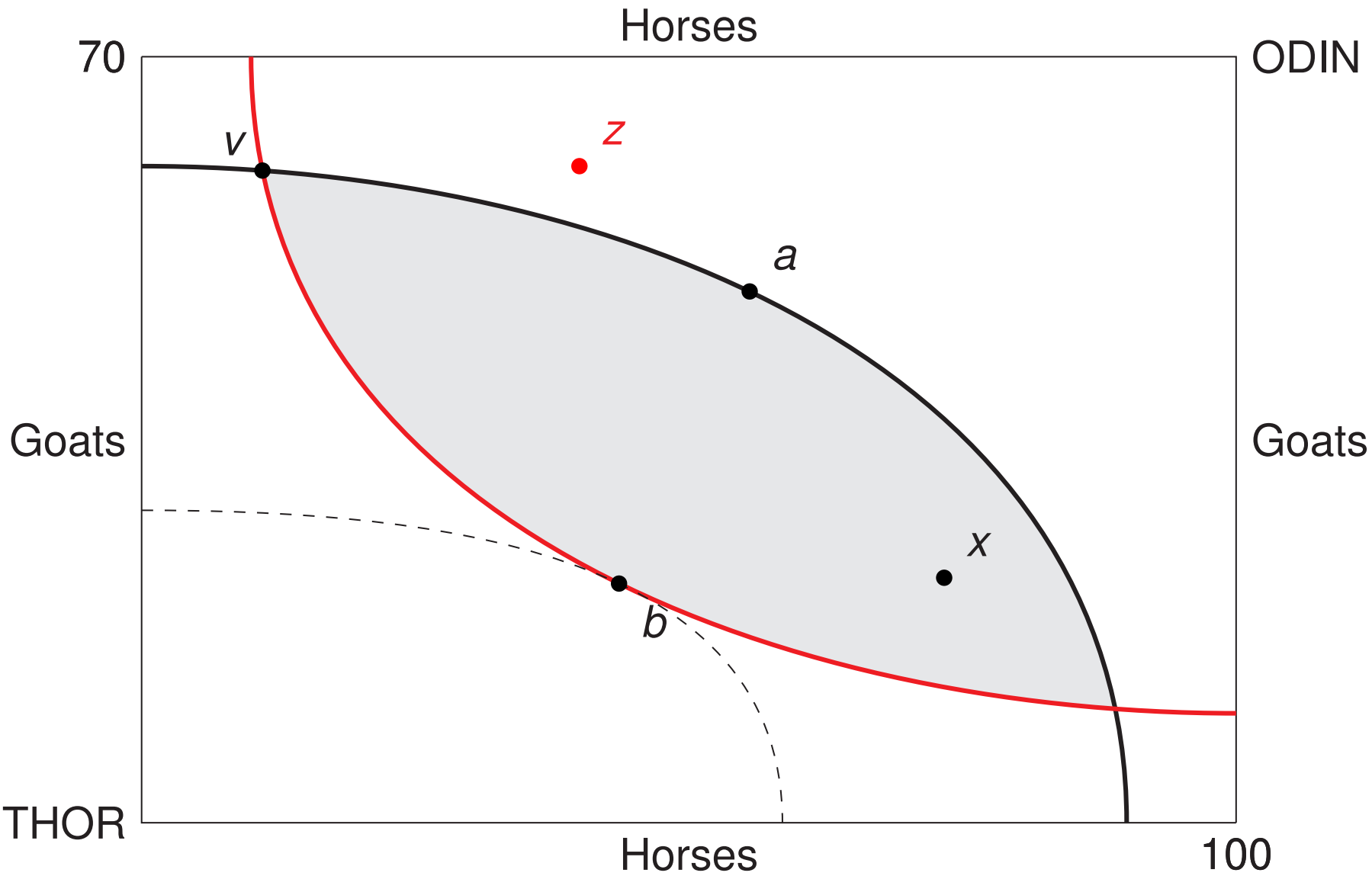

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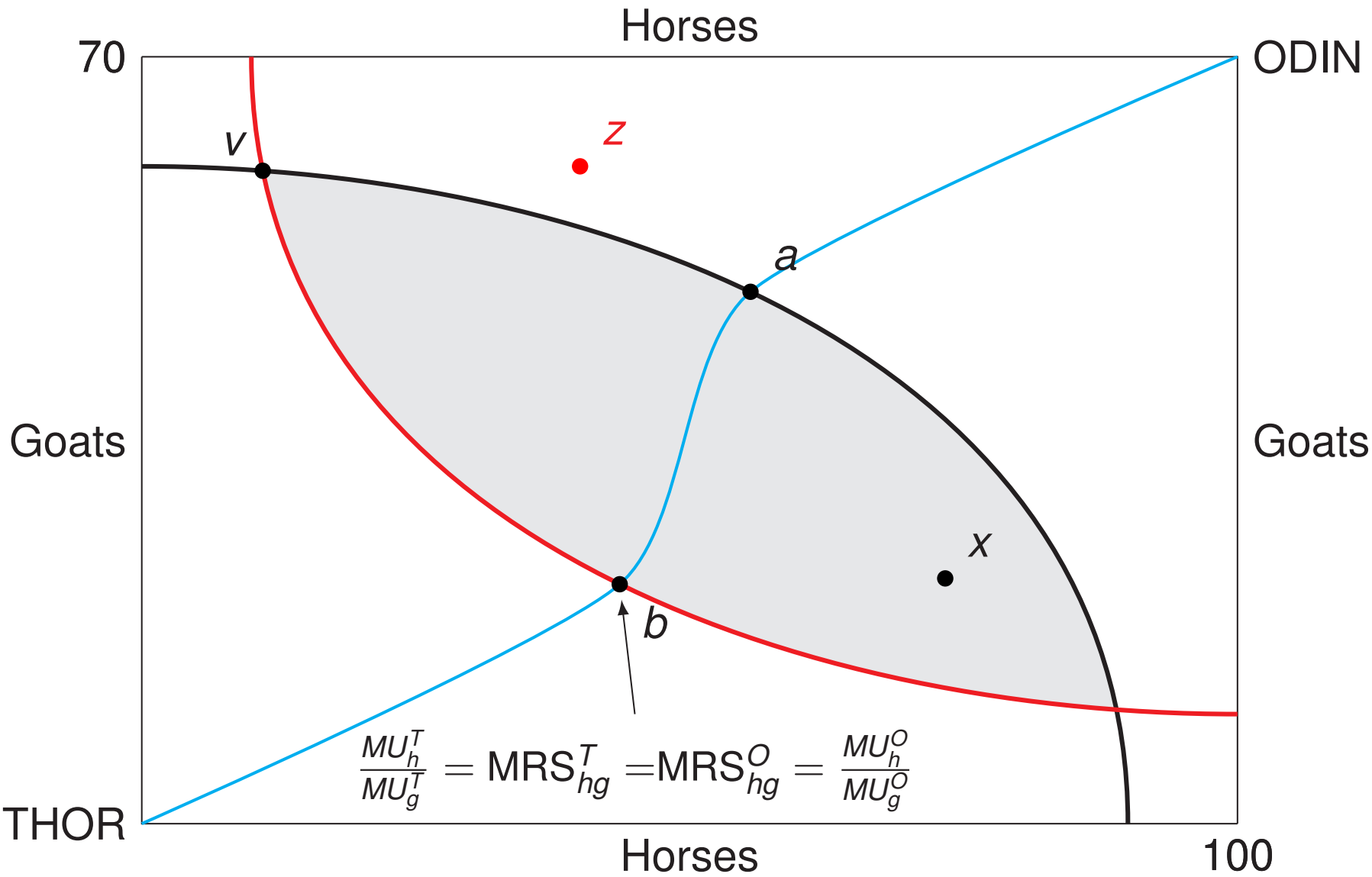
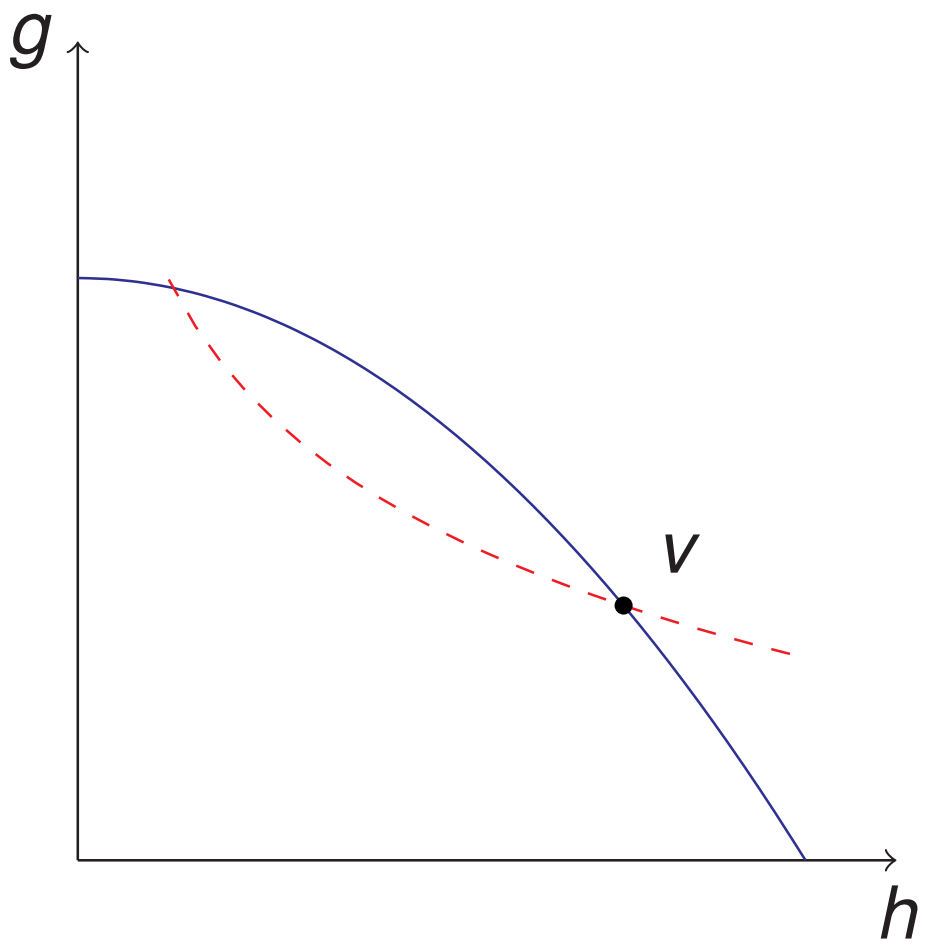


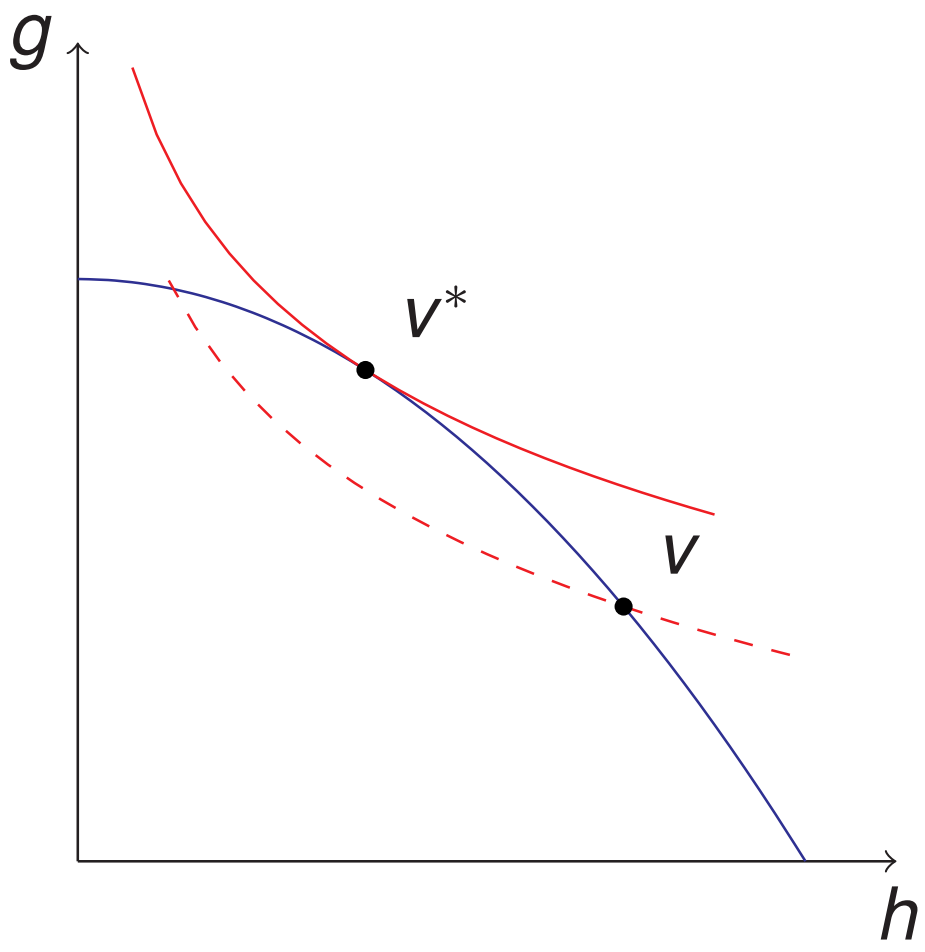
Efficient production



Production economy

- **Production possibilities curve**
- **v: Initial allocation**
- $\text{MRT}_{hg} = \text{MC}_h/\text{MC}_g$

Efficient production



Production economy

- **Production possibilities curve**
- **v: Initial allocation**
- $MRT_{hg} = MC_h/MC_g$
- **v*: Efficient allocation** with transformation
- $MRT_{hg} = MRS_{hg}$

Efficient allocation

Pareto efficiency

- Efficient consumption
  - Marginal Rate of Substitution of (MRS): ratio between marginal utilities (MU)
  - **Contract curve:** $\text{MRS}^T = \text{MRS}^O$

Vilfredo Pareto
(1848 - 1923)

- Efficient production
  - Marginal Rate of Substitution (MRT): ratio between marginal costs (MC)
  - **Efficient allocation** $\text{MRS}^T_{hg} = \text{MRS}^O_{hg} = \text{MRT}_{hg}$

First fundamental theorem of welfare economics

Goal: efficiency. Assume

1. **Perfect competition** (both consumers and producers)
   - No market power
2. **A market exists for every commodity**
   - No market failures

$\Longrightarrow$ The economy achieves a Pareto efficient allocation of resources

First fundamental theorem of welfare economics

Intuition

- (1) implies that people are price-takers
- Consumer theory: if consumer are price takers, the optimal consumption at $MRS_{hg}=P_h/P_g$
- Production side: if firms are price takers, profits are maximized at $MC_h/MC_g=P_h/P_g$
- True for both Odin and Thor and production side
- Reach $MRS^T_{hg} = MRS^O_{hg} = MRS_{hg}$, which is necessary and sufficient condition for Pareto efficiency

Awesome!

Role for the government?

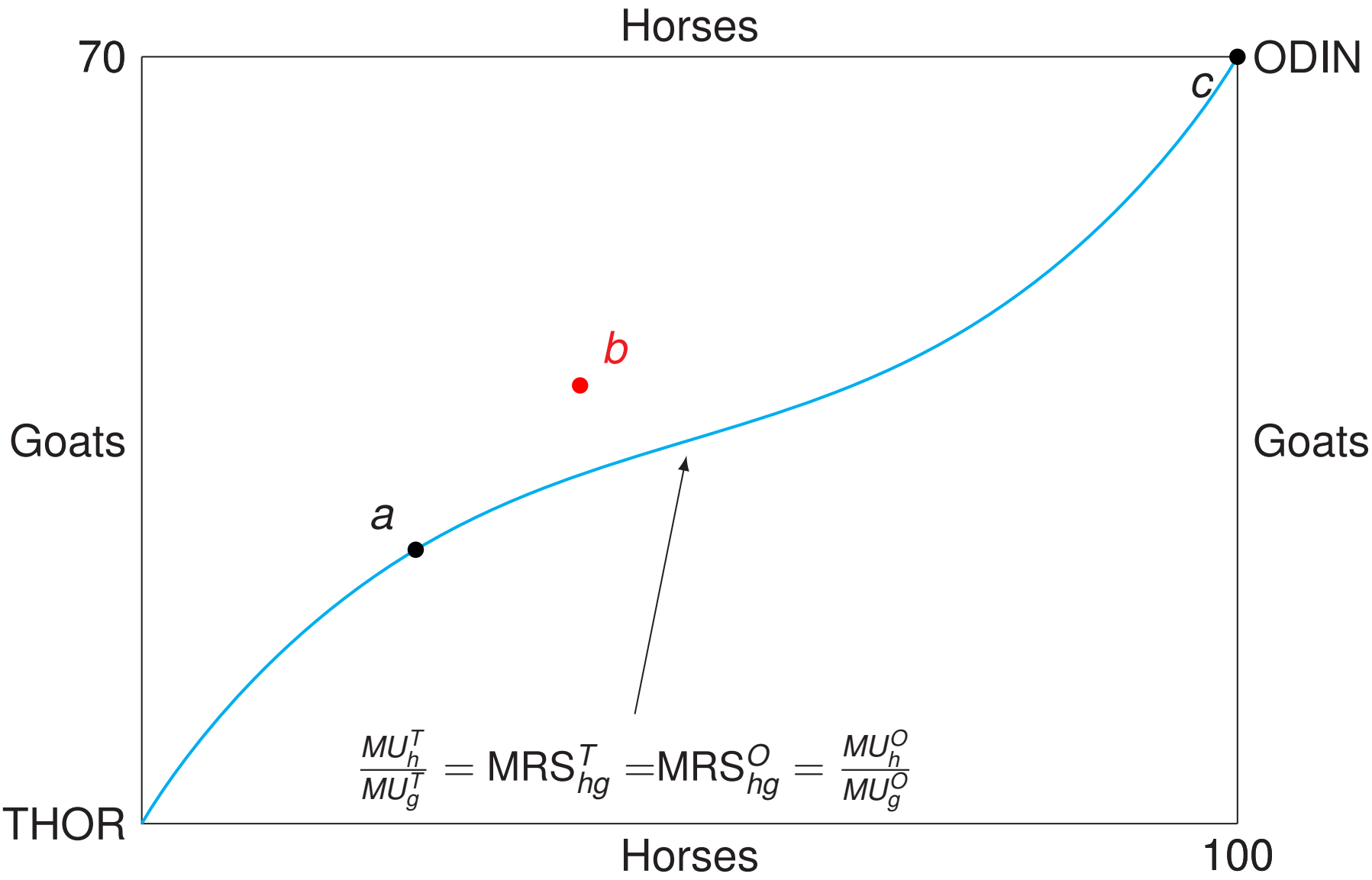
Efficiency and equity

- **Well, there's that detail of assumptions ❶ & ❷ . . .**
- **Plus. . .**

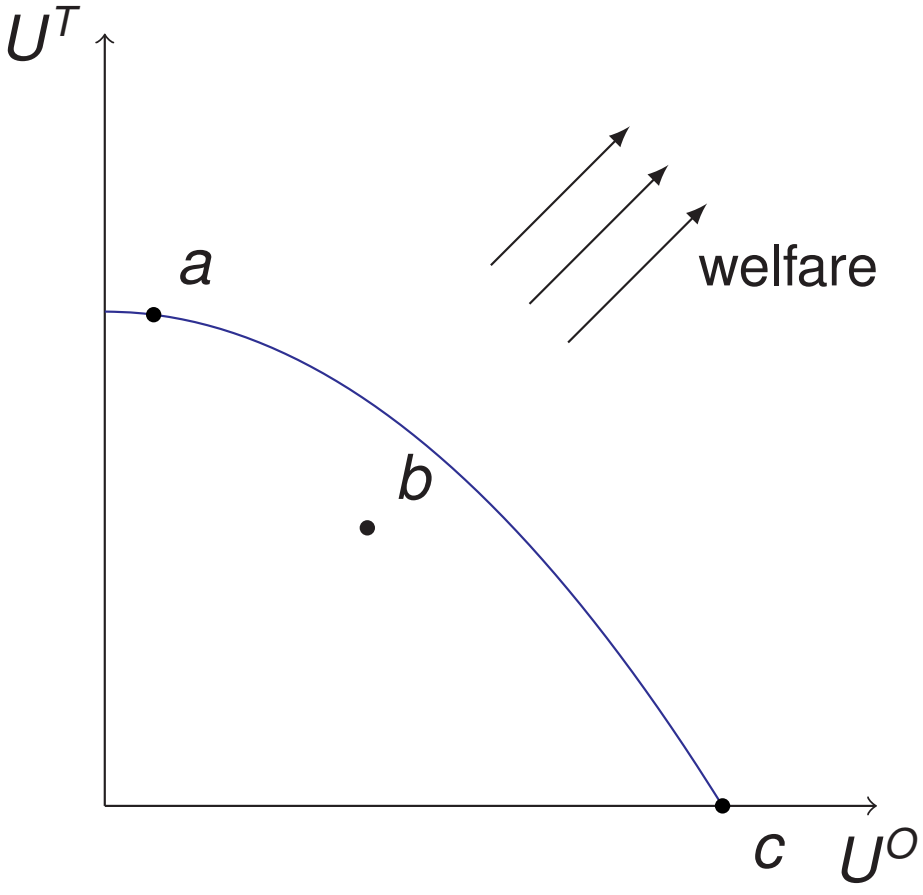
> *"But I don't want comfort. I want God, I want poetry, I want real danger, I want freedom, I want goodness. I want sin."*
>
> *"In fact," said Mustapha Mond, "you're claiming the right to be unhappy."*
>
> *"All right then," said the Savage defiantly, "I'm claiming the right to be unhappy."*

A Brave New World, A. Huxley

Second criterion: Equity and fairness



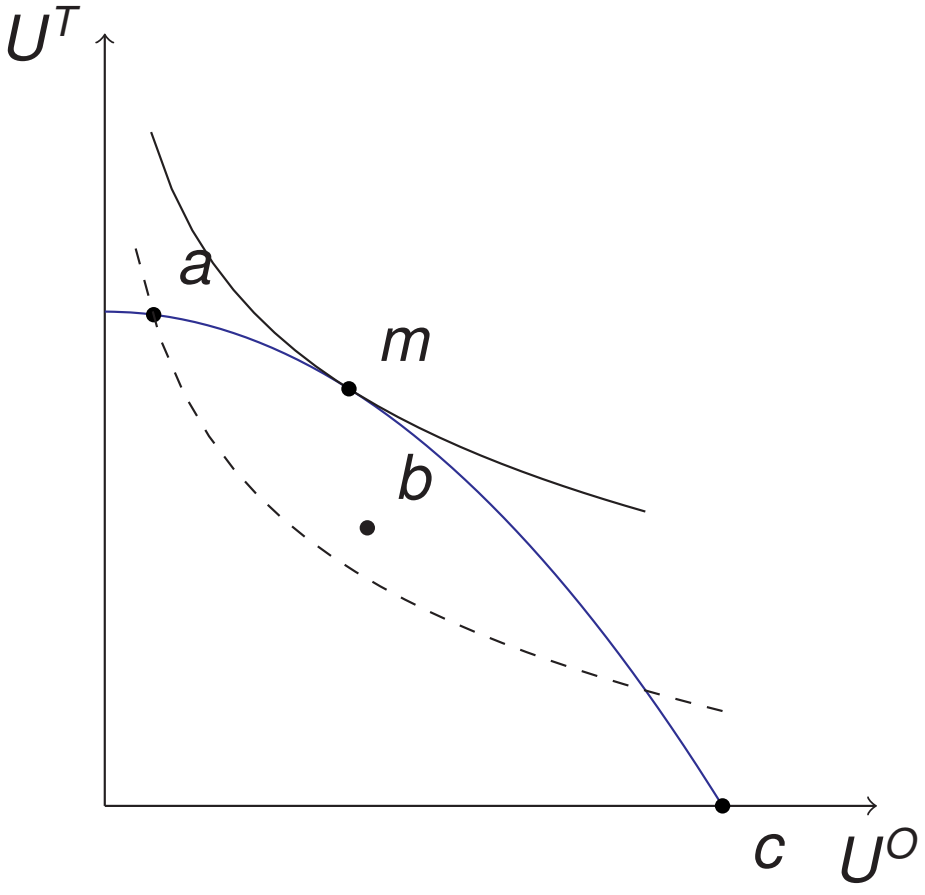
Social welfare functions



Max. social welfare

- **Utility possibilities curve** as costraint

Social welfare functions



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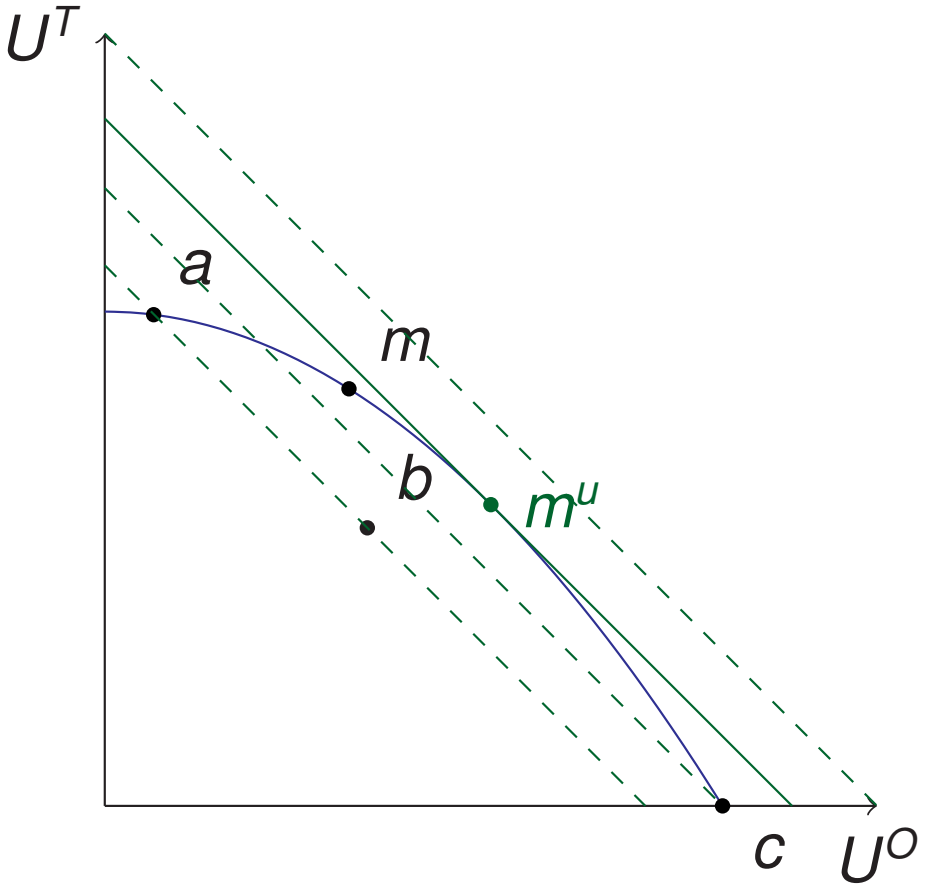
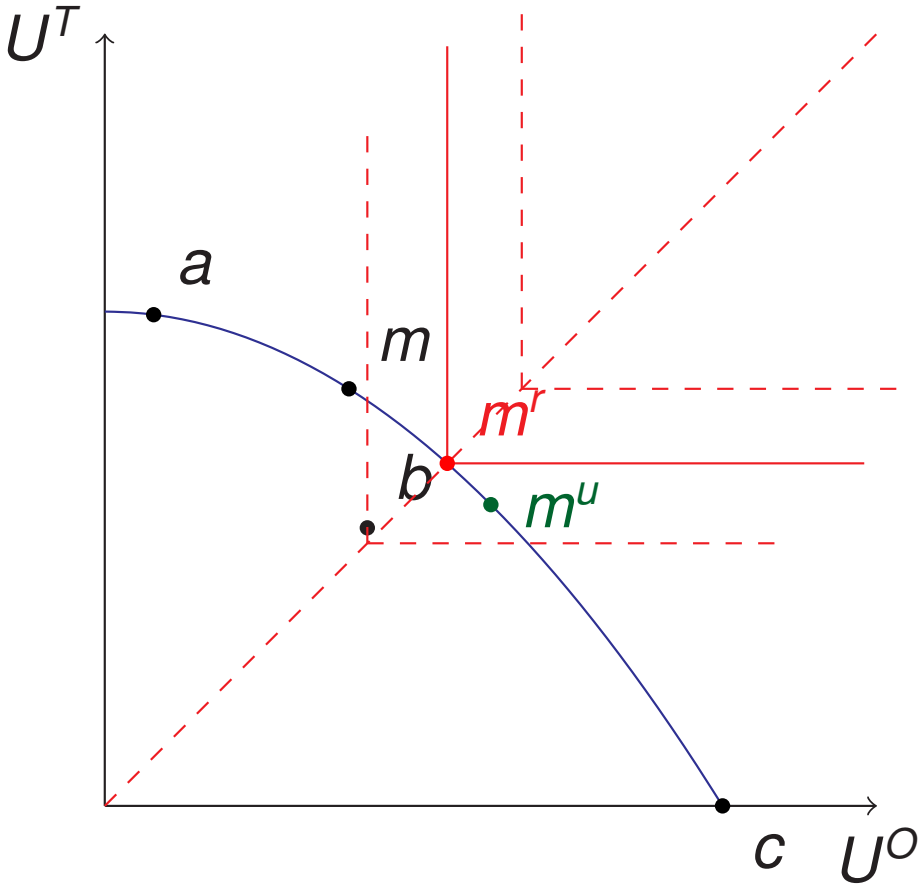


Max. social welfare

- **Utility possibilities curve** as costraint
- **Utilitarian:** F=$\sum U_j$

Social welfare functions



Max. social welfare

- **Utility possibilities curve** as costraint
- **Utilitarian:** F=$\sum U_j$
- **Rawlsian:** F=Min(U_j)

Social welfare function: to keep in mind

$$W = f(U_1, U_2, \ldots, U_i, \ldots, U_n)$$

- **Not necessarily regular shape (synergies)**
- **Underlying assumption:** goal of the state is individual happyness
  - Theocracies? Kingdoms?
  -

2nd fundamental theorem of welfare economics

Goal: achieve desired utility distribution

- **Affect/interfere with prices?**
  - Very costly, inefficient
- If conditions holds (perfect competition + existence of markets)

$\Longrightarrow$ Any desired distribution in equilibrium achievable by changing initial allocation of resources and then letting people trade freely

Role for government

1st theorem conditions: correct market failures

1. **Market power**
   - Monopolies
   - Oligopolies
   - (Monopsony. . .)
2. **Non-existing markets**
   - Public goods
   - Externalities
   - Asymmetric information

However...

Public intervention is often expensive - in **efficiency** terms
Taxes are generally distortionary

- **Redistribution of initial allocation is inefficient**
  - Carrying water with a leaking bucket
  - Trade-off between equality & efficiency
- **Public intervention for correction of market failures**
  - Trade-off between inefficiency and efficiency
  - Can be that public intervention increases both efficiency and equality

Optimal public policy

- **MBPF:** Marginal Benefit of Public Financing
- **MCPF:** Marginal Cost of Public Financing
- **Optimal condition:** MCPF=MBPF

Home assignment

- **RG, ch.3, ex 1**
- **RG, ch.3, ex 14**