LECTURE 13

ELASTIC PRICING

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PLAN

1. Structure of project 2

We focus in these slides on the math only. What is elastic pricing. Which demand curve gives unit elasticity?

2.Price elasticity of demand

3. Elastic Pricing Theorem

The second project deals with Price Elasticity of Demand

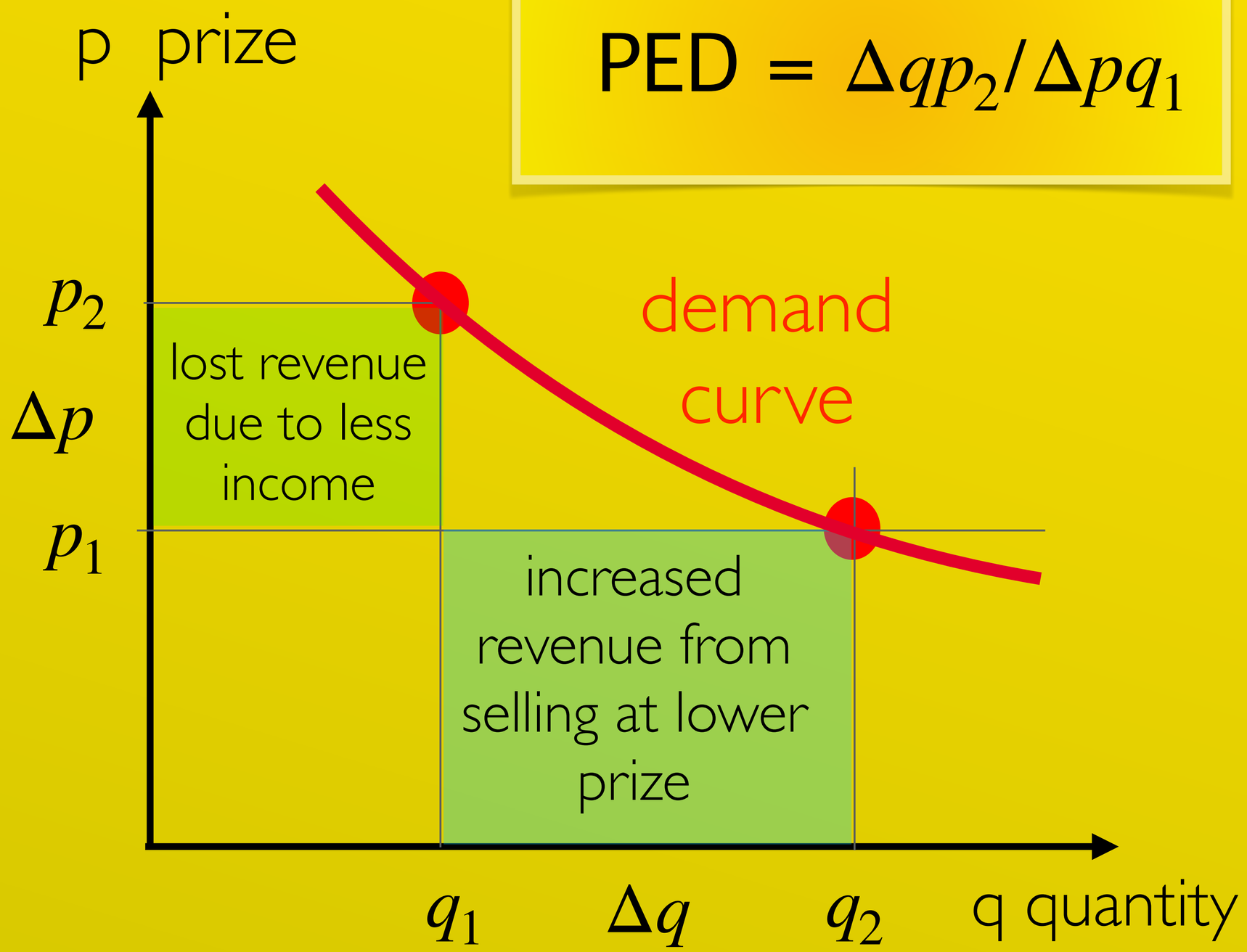
STRUCTURE

10/9	Anticipate
10/16	Explore 1
10/23	Explore 2
10/20	Data digging

Project description and videos on the website

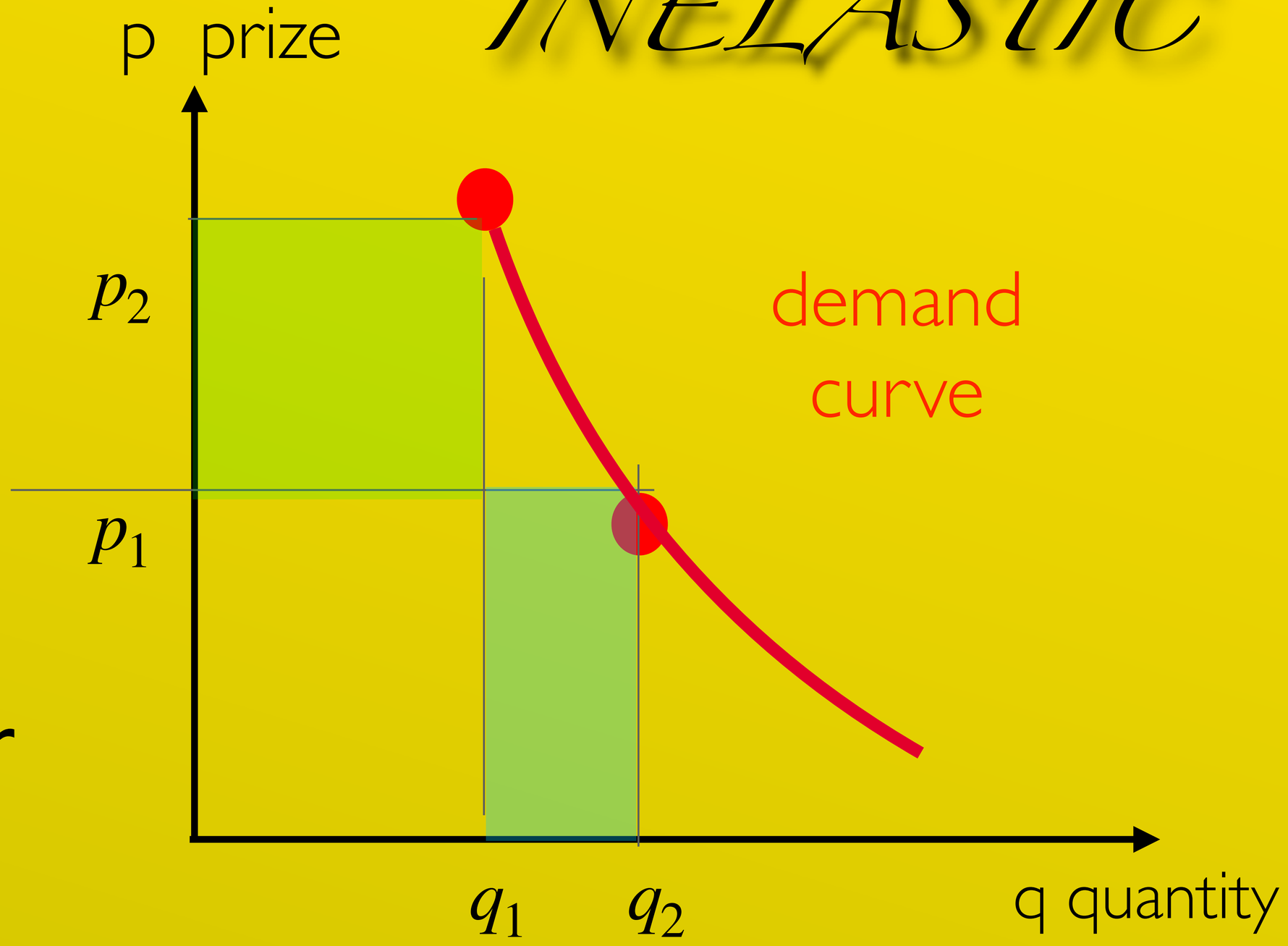
PRIZE ELASTICITY OF DEMAND

$$PED = \Delta qp_2 / \Delta pq_1$$



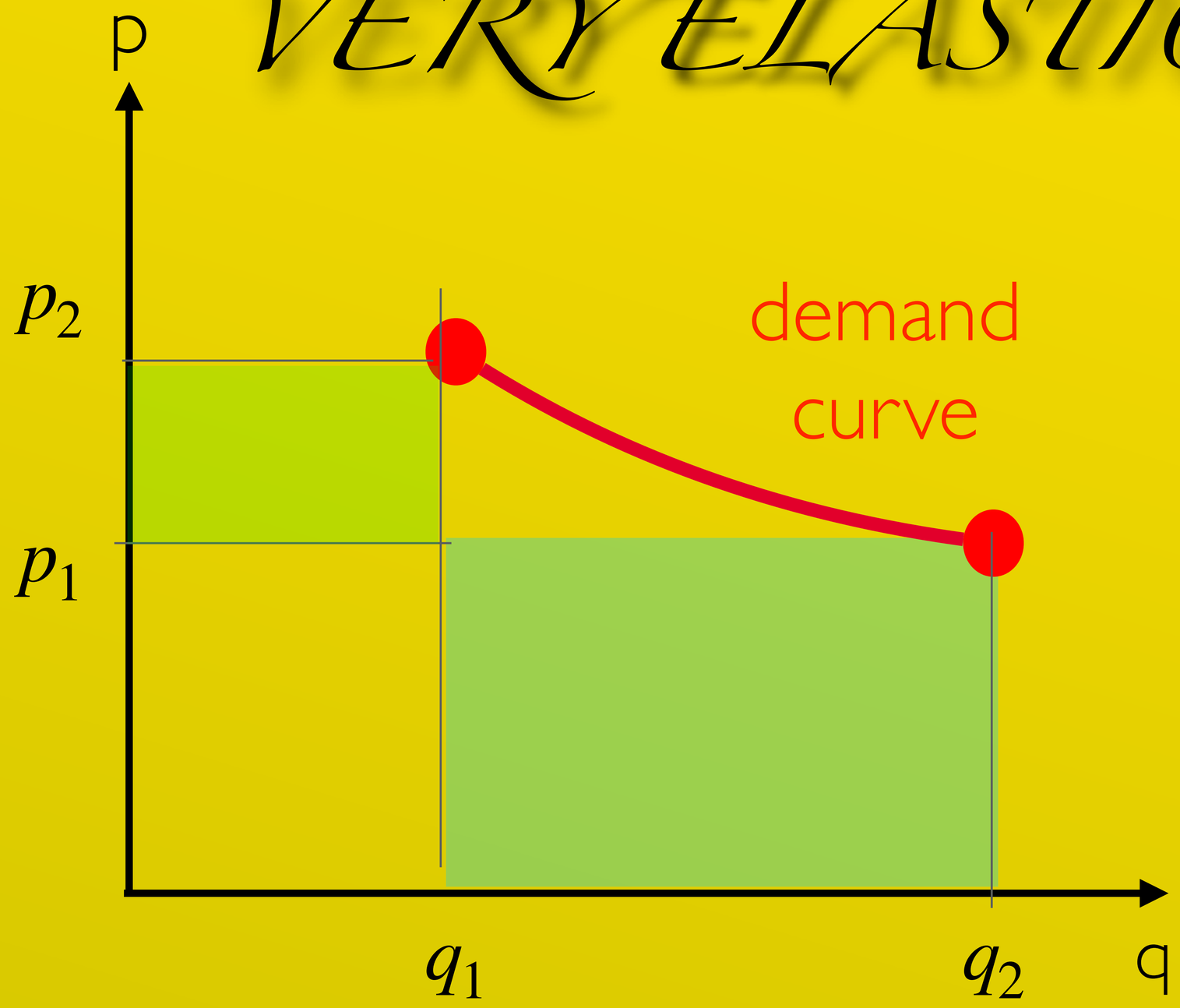
$$PED = q' \frac{p}{q}$$

INELASTIC



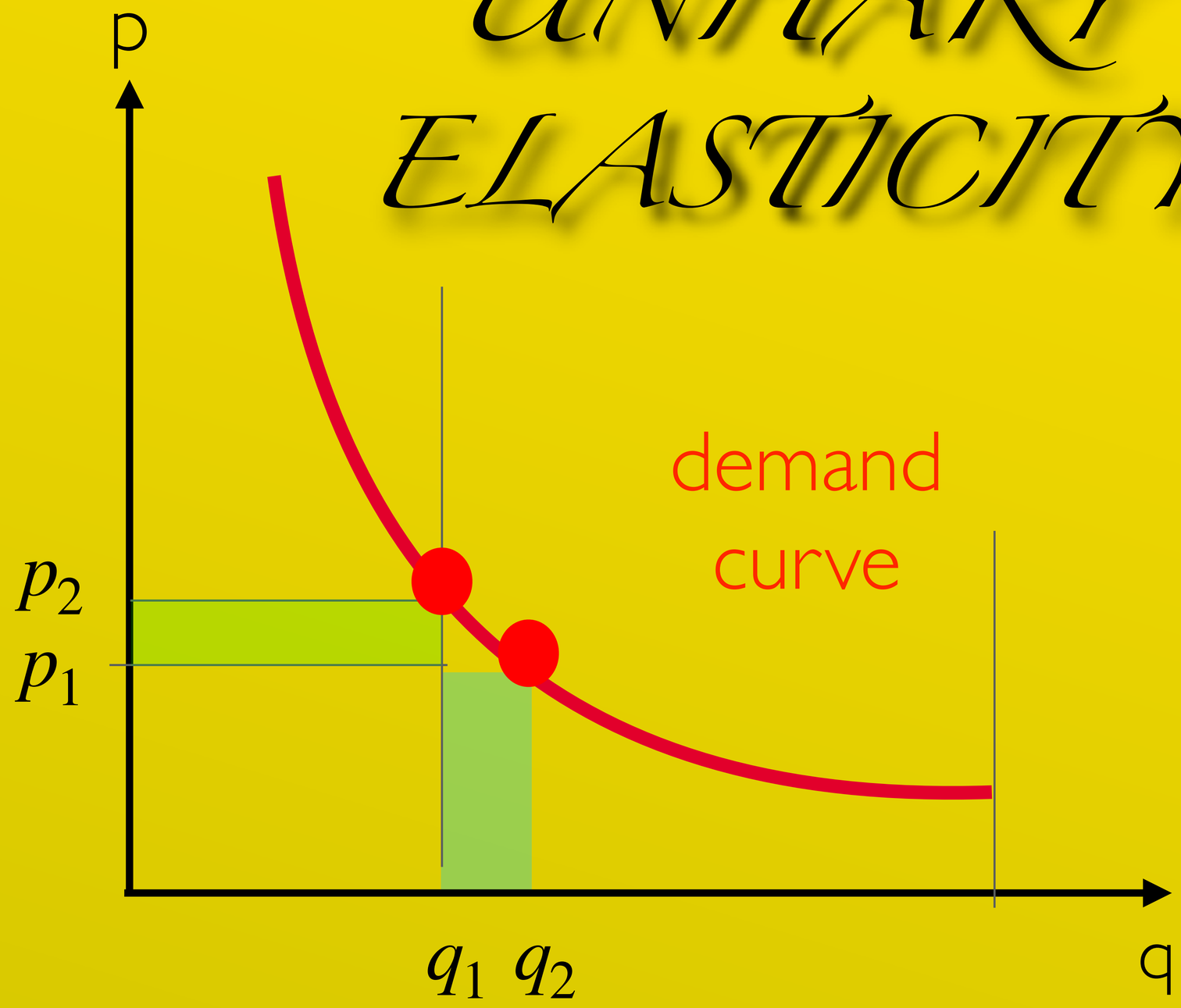
PED smaller
than unit

VERY ELASTIC



PED larger
than unit

UNITARY ELASTICITY



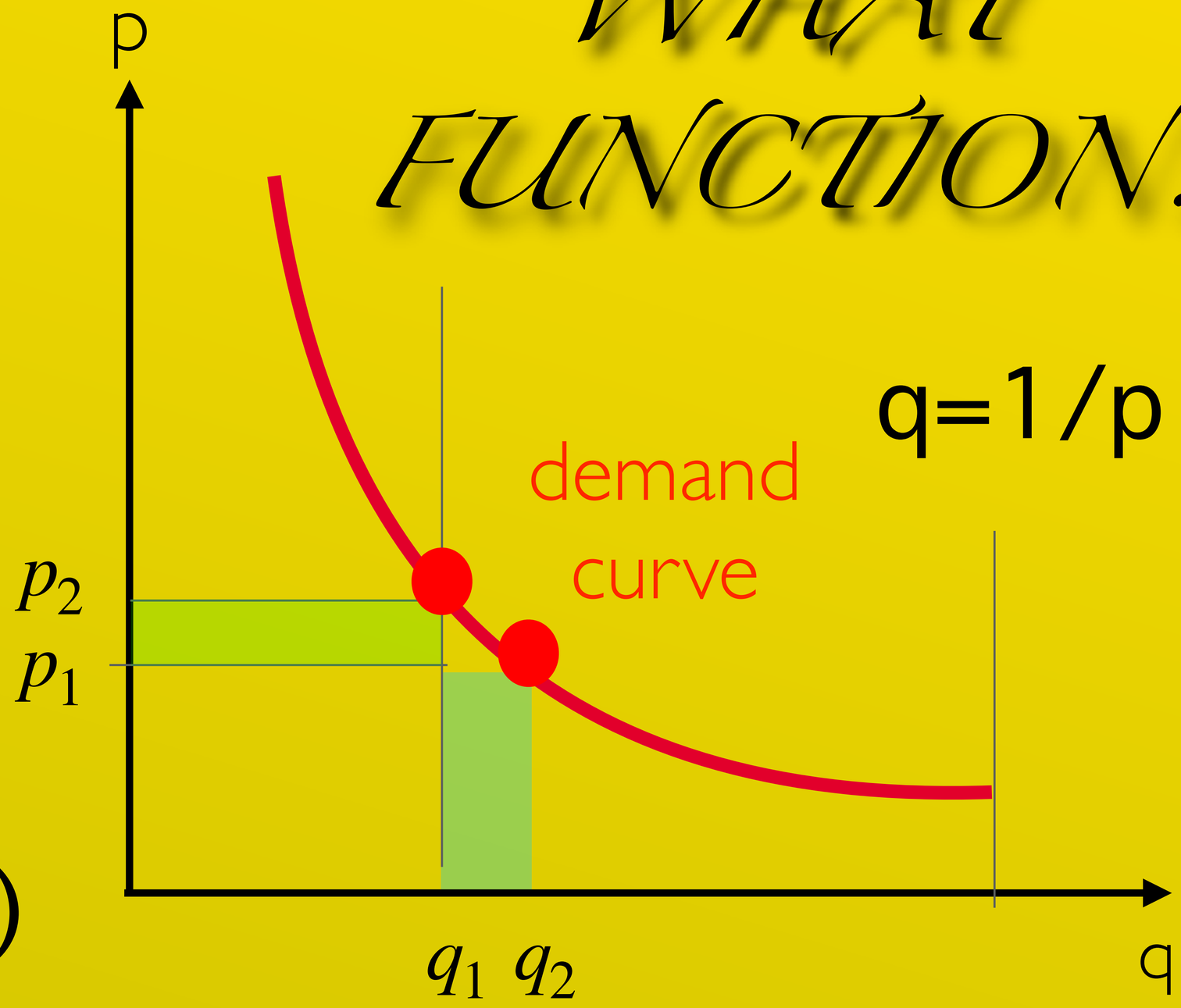
PED = -1

WHAT FUNCTION?

$q'/q = -1/p$

$p'/p = -1/q$

$q=1/p$



$\log(q) = -\log(p)$

A THEOREM

Thm

The price-elasticity of demand function is c/x if the elasticity is -1 at every point.

Proof:

f(x) = c/x

f'(x) = -c/x^2

f'(x)/f(x) = -1/x

(To see that this is the only function, one needs some theory of differential equations): f'(x)=-f(x)/x has only the solution c/x). This is similar to f'=f having only the solution f(x) = ce^x)

THE END