LECTURE 4.5

SECOND DEGREE

PRICE DISCRIMINATION

SECOND DEGREE PRICE DISCRIMINATION

When we can't distinguish market segments ourselves, induce self-selection so consumers distinguish themselves for us. This is second-degree price discrimination. Examples:

Versioning:

- Design product versions that appeal to different consumers (e.g. "high-end" products for high-income consumers).

- Induce consumers with higher incomes/taste for quality to pay more.

Bundling:

- Sell a package of products together, often at a discounted price.

- Induce consumers who value more products to buy more.

Key: ensure that each group of consumers prefers the scheme/product designed for them

- • e.g. economy-class seats should be "uncomfortable" enough that business- or first-class customers do not want to buy

VERSIONING

Versioning example:

- Buyers are considering two versions of tax software

- Assume each buyer buys one version of software and they choose the edition that gives them the greatest level of consumer surplus

- Assume, that the marginal cost of production is zero

- The table shows the valuations that each type of buyer places on the software.

VERSIONING

	Individual	Self employed
Income tax software (Basic)	20	35
Income tax + (Deluxe)	20	100

What is our dream outcome: P_B=20 & P_D=100, and Individual buys the Basic and Self-employed buys the Deluxe.

Profits = $120

But will this occur?

VERSIONING

	Individual	Self employed
Income tax software (Basic)	20	35
Income tax + (Deluxe)	20	100

What if we priced at: P_B=20 and P_D=84?

Individual buys the Basic and Self-employed buys the Deluxe.

Profits = $104

VERSIONING

	Individual	Self employed
Income tax software (Basic)	20	35
Income tax + (Deluxe)	20	100

What if we priced at: P_B=20 and P_D=86?

Individual buys the Basic and Self-employed buys the Basic.

Profits = $40

VERSIONING

	Individual	Self employed
Income tax software (Basic)	20	35
Income tax + (Deluxe)	20	100

What if we priced at: P_D=100? (We only sell the Deluxe)

Individual buys nothing and Self-employed buys the Deluxe.

Profits = $100

VERSIONING

	Individual	Self employed
Income tax software (Basic)	20	35
Income tax + (Deluxe)	20	100

What if we priced at: P_B=20? (We only sell the basic)

Individual buys the Basic and Self-employed buys the Basic.

Profits = $40

Note: in each case we cannot determine each type. They sort themselves.
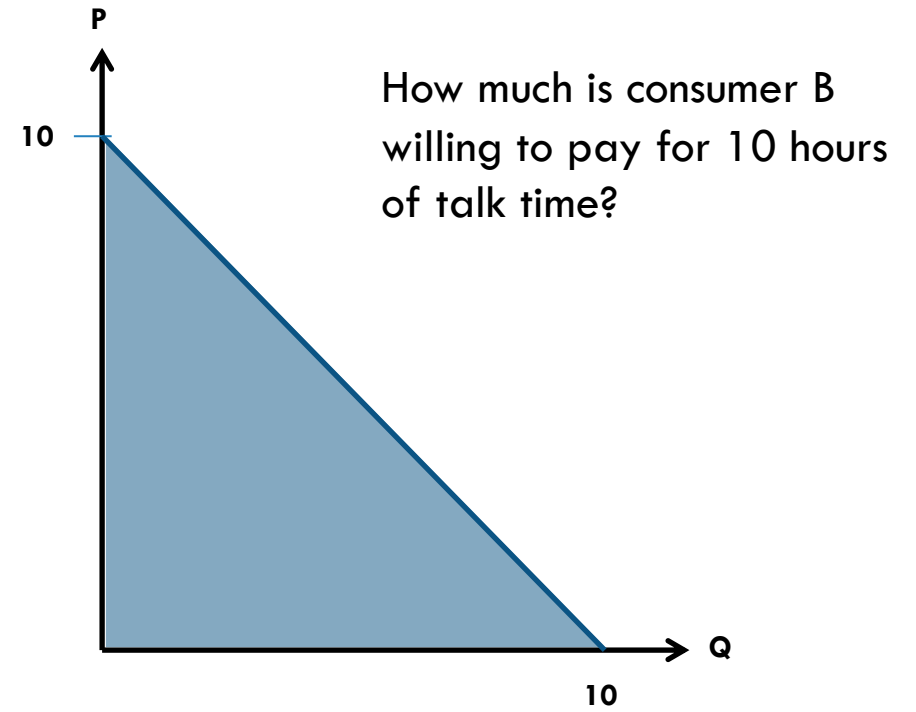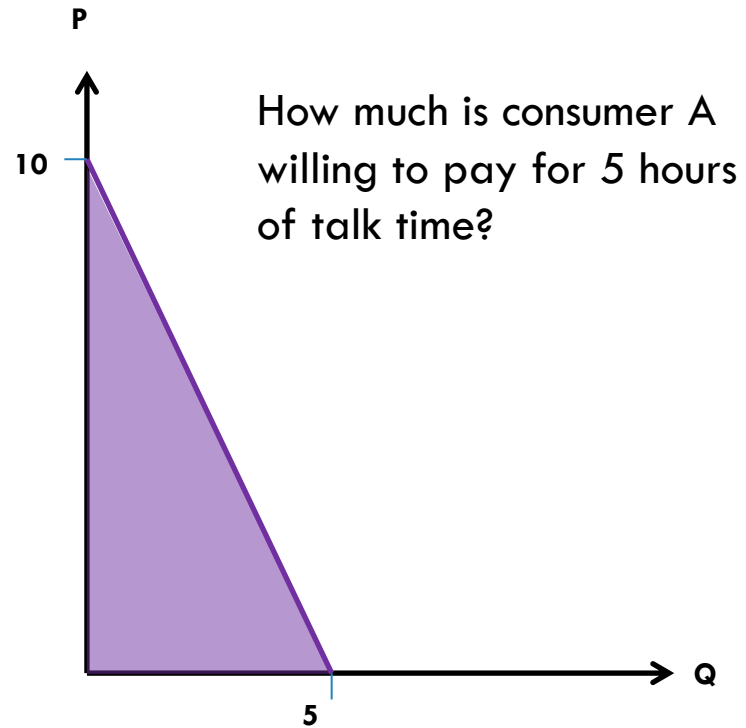
VERSIONING

We can also think about menu pricing or second degree price discrimination using demand curves.

The key here is that the area under the demand curve represents the willingness to pay for individuals.
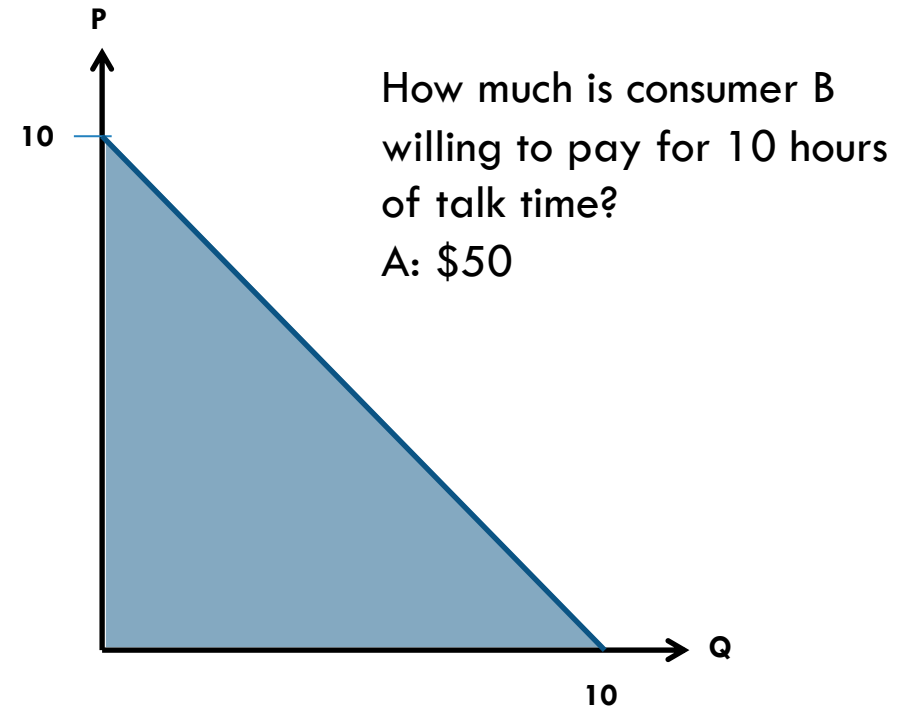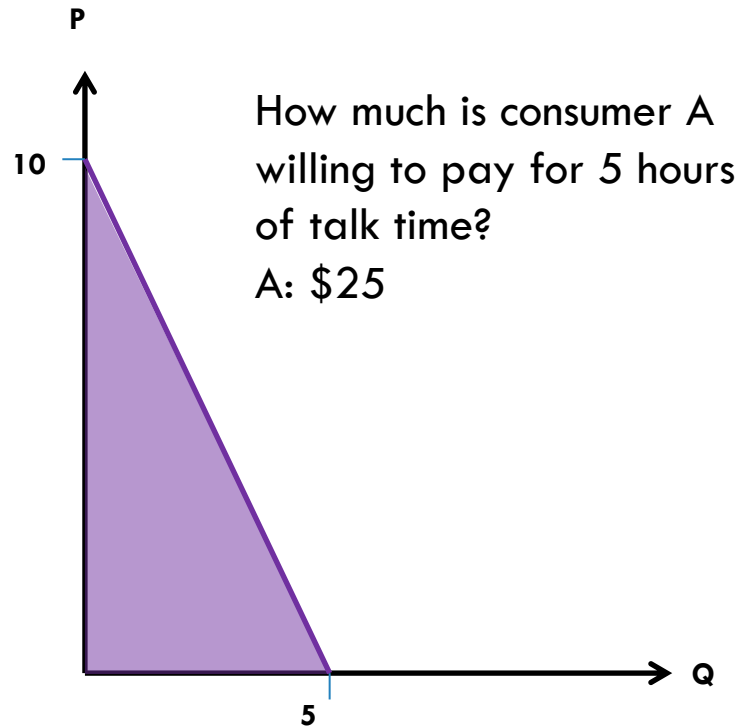
We need to ensure that each individual purchases the appropriate (i.e. profit maximising) option.

Consider the following example of willingness to pay for phone plans.

VERSIONING

10

How much is consumer A
willing to pay for 5 hours
of talk time?

Q

5

P

10

How much is consumer B
willing to pay for 10 hours
of talk time?

Q

10

VERSIONING

How much is consumer A willing to pay for 5 hours of talk time?
A: $25

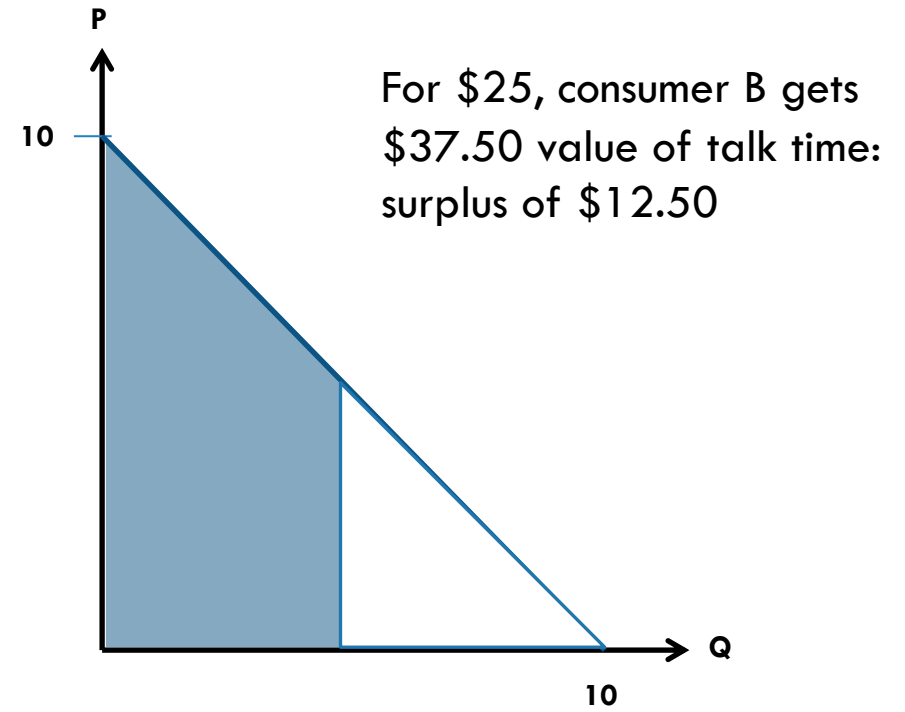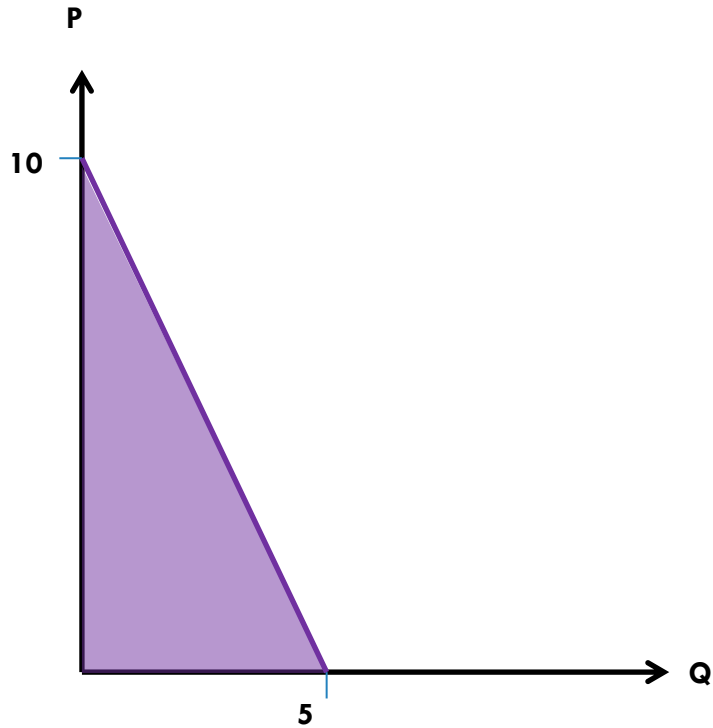How much is consumer B willing to pay for 10 hours of talk time?
A: $50

VERSIONING

Suppose that two plans are offered – the budget (5 hours talk time per month) for $25 and deluxe (10 hours talk time) for $50.

Person A buys the budget, as does person B.

Why?

VERSIONING

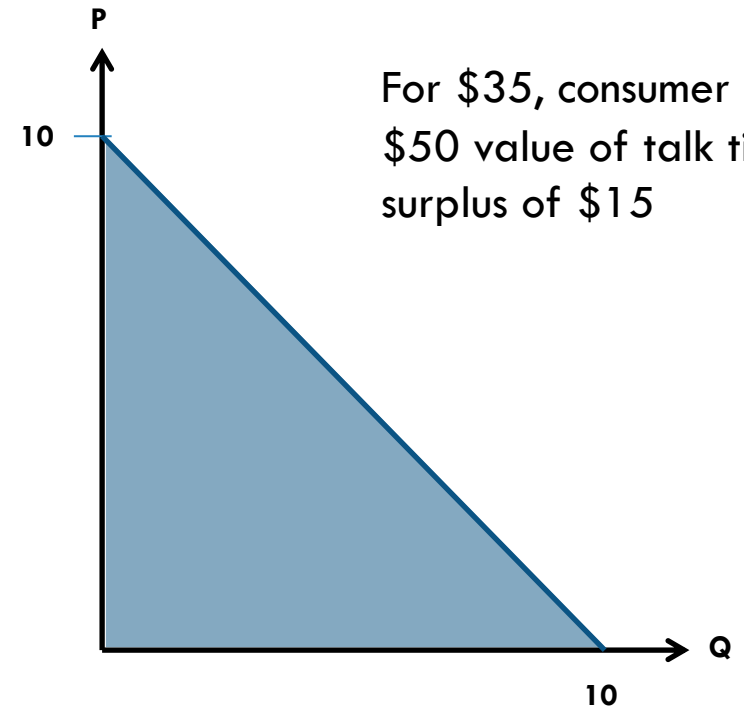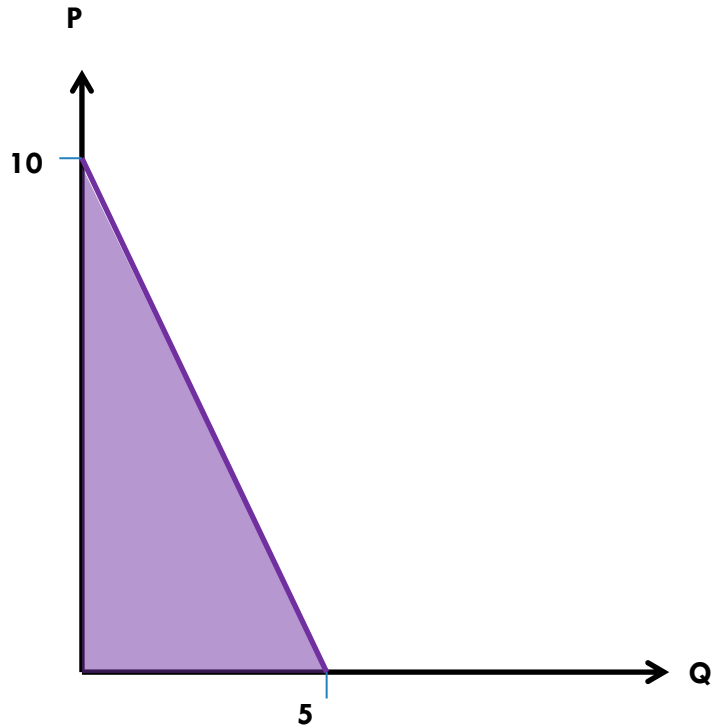For $25, consumer B gets $37.50 value of talk time: surplus of $12.50

VERSIONING

Suppose that two plans are offered – the budget (5 hours talk time per month) for $25 and deluxe (10 hours talk time) for $35.

Person A buys the budget, and person B buys the deluxe.

Why?

VERSIONING

P

10

5

Q

P

10

For $35, consumer B gets
$50 value of talk time:
surplus of $15

10

Q

BUNDLING

Bundling example:

- Buyers are considering two television station bundles

- Assume that the marginal cost of production is $10

- The table shows the valuations that each type of buyer places on each package.

BUNDLING

	Malcolm	**Tony**
Trump Apprentice Network	60	40
World Series Triathalon	40	60

What if we priced at: P_A=40 and P_T=40?

Malcolm and Tony buy both channels. Revenue is $160.

Profits = $120

BUNDLING

	Malcolm	Tony
Trump Apprentice Network	60	40
World Series Triathalon	40	60

What if we only sold the two together as a bundle: P_B=100?

Malcolm and Tony buy the bundle. Revenue is $200.

Profits = $160

BUNDLING

Pure bundling: several products are sold in a package, and no separate purchase is available

- e.g. music albums, newspapers and magazines, cable packages, degree programs

Mixed bundling: alongside each separately priced product, a package of more than one product is sold at a discount relative to the components

- season tickets, software suites, TV + Internet + Telephone, value meals

BUNDLING

Bundling example:

- Buyers are considering two software packages

- Assume that the marginal and average cost of production is $0

- The table shows the valuations that each type of buyer places on each product.

BUNDLING

	Marge	Aaron	Brigette	Chuck
Word Processor	120	110	90	30
Spreadsheet	30	90	110	120

What if we did not bundle and priced at: P_W=90 and P_S=90?

Buyers of each are circled (sell three of each at $90).

Profits = $540

BUNDLING

	Marge	Aaron	Brigette	Chuck
Word Processor	120	110	90	30
Spreadsheet	30	90	110	120

What if we bundled and priced at: P_B=150?

Buyers of each are circled (sell four of each at $150).

Profits = $600

BUNDLING

	Marge	Aaron	Brigette	Chuck
Word Processor	(120)	110	90	30
Spreadsheet	30	90	110	(120)

What if we had optional bundling and priced at: P_W=120, P_W=120 and P_B=200?

Buyers of each are circled (sell three bundles and one each of the standalone products).

Profits = $640

PROFIT MAXIMISING PRICING – OTHER STRATEGIES

Coupons:

- Idea: buyers with low willingness to pay may also value their time less, and will spend more time clipping coupons

- Outcome: people with higher value of time pay more

Pricing complementary products:

- Idea: reducing one product price increases the demand for both products (e.g. razor blades and razors, Kindle and Amazon e-books)

- Outcome: lower price than when each product is sold by separate firms

Inter-temporal price discrimination:

- Price declines over time (e.g. movies, books, electronics, video games) • Idea: high valuation users are often less patient

- Outcome: less patient (or high valuation) consumers pay more