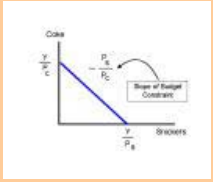
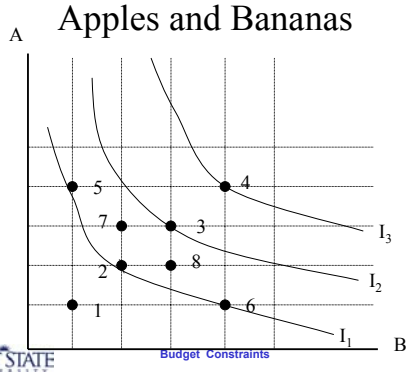
Budget Constraints



More on the Theory of Choice

- We have talked about indifference curves to represent a consumer's preferences.
- That is not all of the story. Budget realities play a role.

Apples and Bananas



Marginal Rate of Substitution

$$U = AB$$

- In this example, the following points lie on a single indifference curve:

Apples	16	8	5.33	4	3.2	2.67
Bananas	1	2	3	4	5	6

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Declining MRS

- MRS is declining. With more bananas, the number of apples you will give up to get another banana declines

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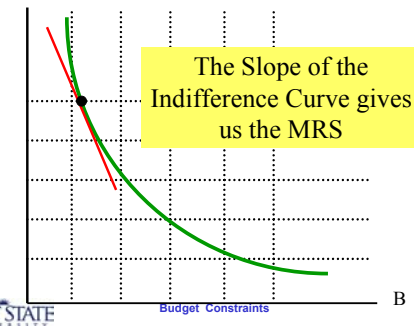
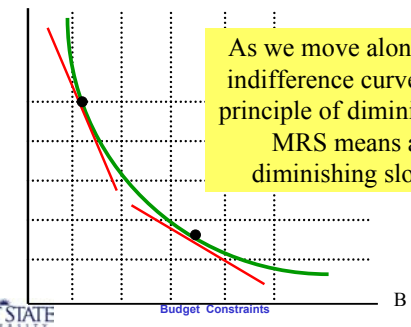
MRS and Indifference Curves



The Slope of the Indifference Curve gives us the MRS

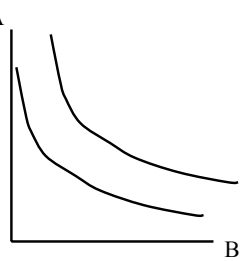
MRS and Indifference Curves



As we move along the indifference curve, the principle of diminishing MRS means a diminishing slope

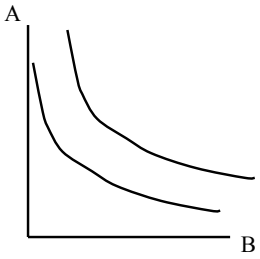
The Budget Constraint

- Indifference curves, such as shown on the right, tell us about preferences



The Budget Constraint

- Indifference curves, such as shown on the right, tell us about preferences
- There is another part of the story, the budget constraint



The Budget Constraint

- Suppose apples sell for p_A; bananas for p_B

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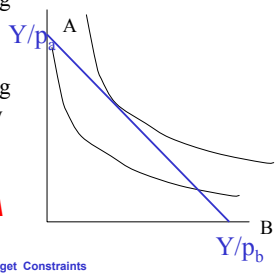
$$B = (1/p_b)Y - (p_a/p_b)A$$

Graphing The Budget Constraint

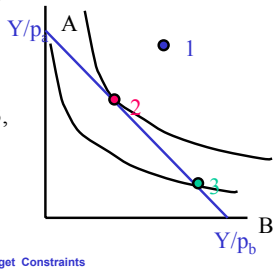
- If we spend everything on bananas, we can buy Y/p_b bananas.
- If we spend everything on apples, we can buy Y/p_a apples

$$B = (1/p_b)Y - (p_a/p_b)A$$



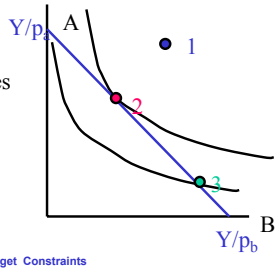
Constrained Maximization

- Look at three possible choices: 1, 2, and 3
- 1 is the best, but we cannot afford it
- We can afford 2 and 3, but 2 lies on a higher indifference curve



Constrained Maximization

- In fact, given the budget, 2 is the best we can do.
- This choice maximizes utility *subject to the budget constraint*



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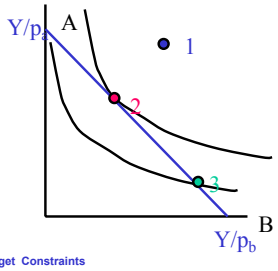
- At the utility-maximizing point, the budget line is just tangent to the indifference curve.



The Budget Constraint

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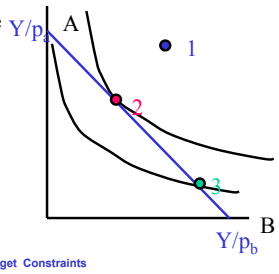
- It just touches the curve.



MRS and MRT

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$$MRT = \frac{p_a}{p_b}$$

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MRS and MRT

Sell an apple, buy five bananas and be better off

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MRS and MRT

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MRS and MRT

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Sell five bananas, get another apple and be better off

End