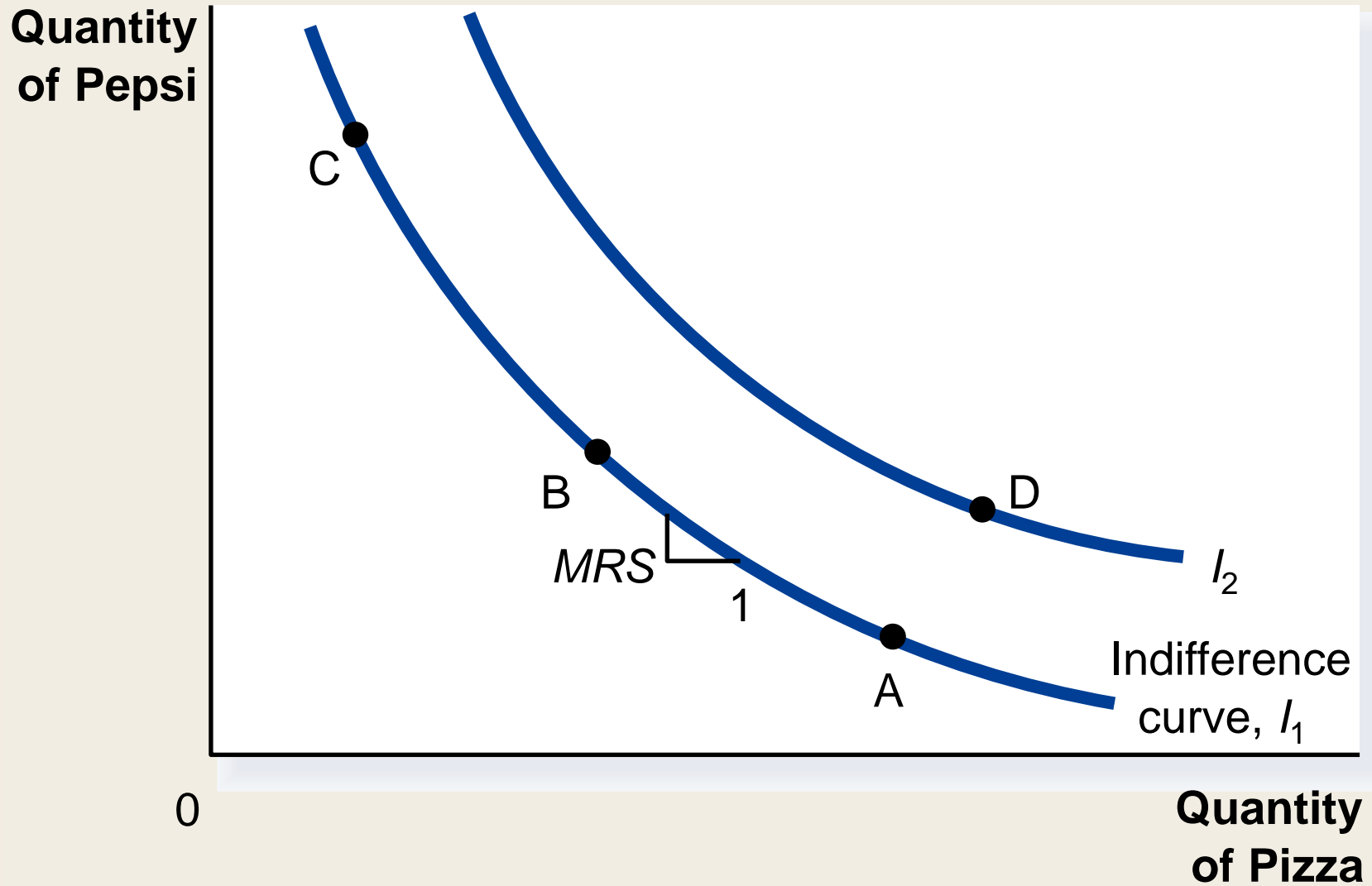


Representing Preferences with Indifference Curves

- The Consumer's Preferences
 - The consumer is indifferent, or equally happy, with the combinations shown at points A, B, and C because they are all on the same curve.
- The Marginal Rate of Substitution
 - The slope at any point on an indifference curve is the *marginal rate of substitution*.
 - It is the rate at which a consumer is willing to trade one good for another.
 - It is the amount of one good that a consumer requires as compensation to give up one unit of the other good.

Figure 2 The Consumer's Preferences



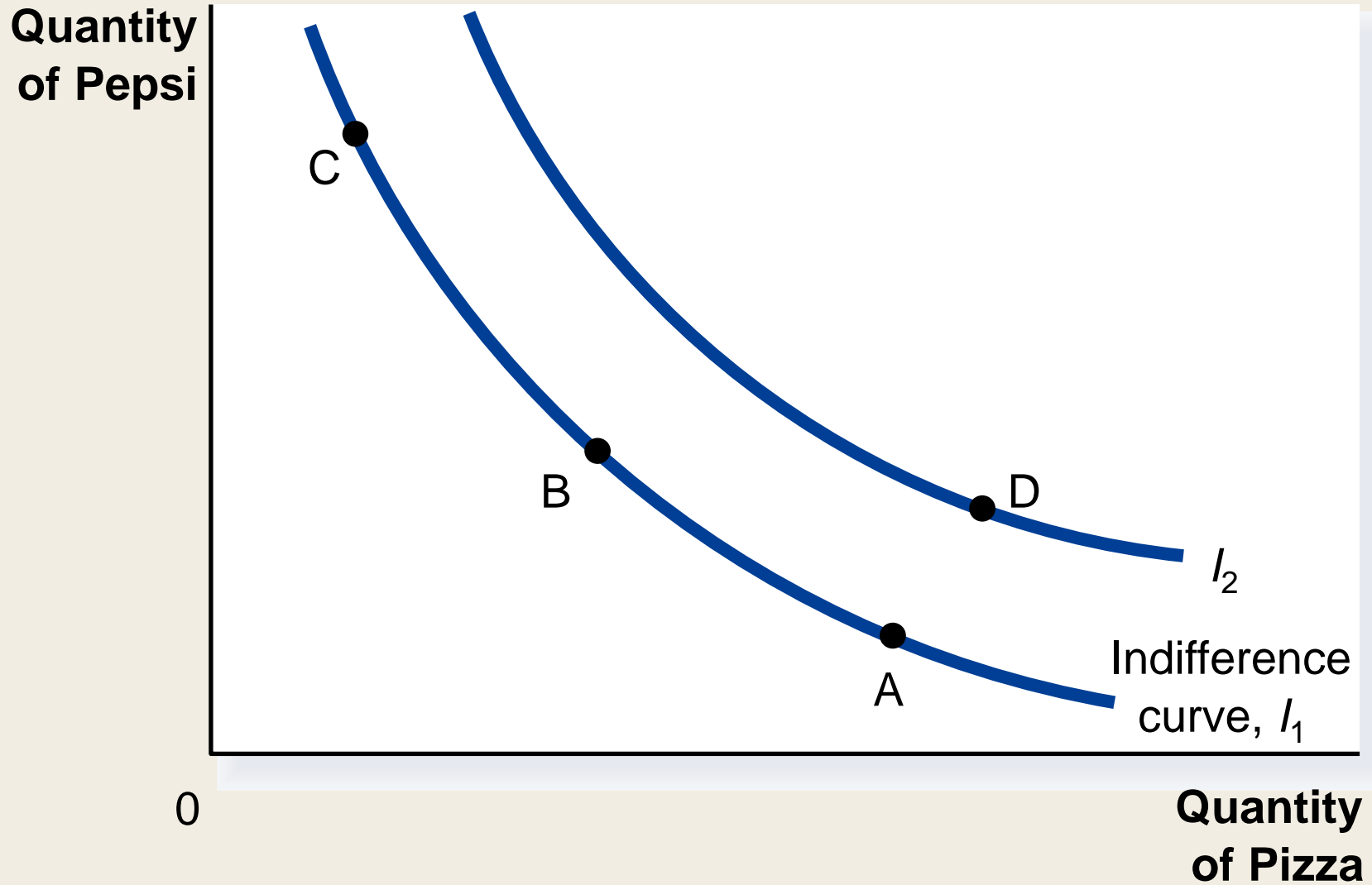
Four Properties of Indifference Curves

- Higher indifference curves are preferred to lower ones.
- Indifference curves are downward sloping.
- Indifference curves do not cross.
- Indifference curves are bowed inward.

Four Properties of Indifference Curves

- Property 1: Higher indifference curves are preferred to lower ones.
 - Consumers usually prefer more of something to less of it.
 - Higher indifference curves represent larger quantities of goods than do lower indifference curves.

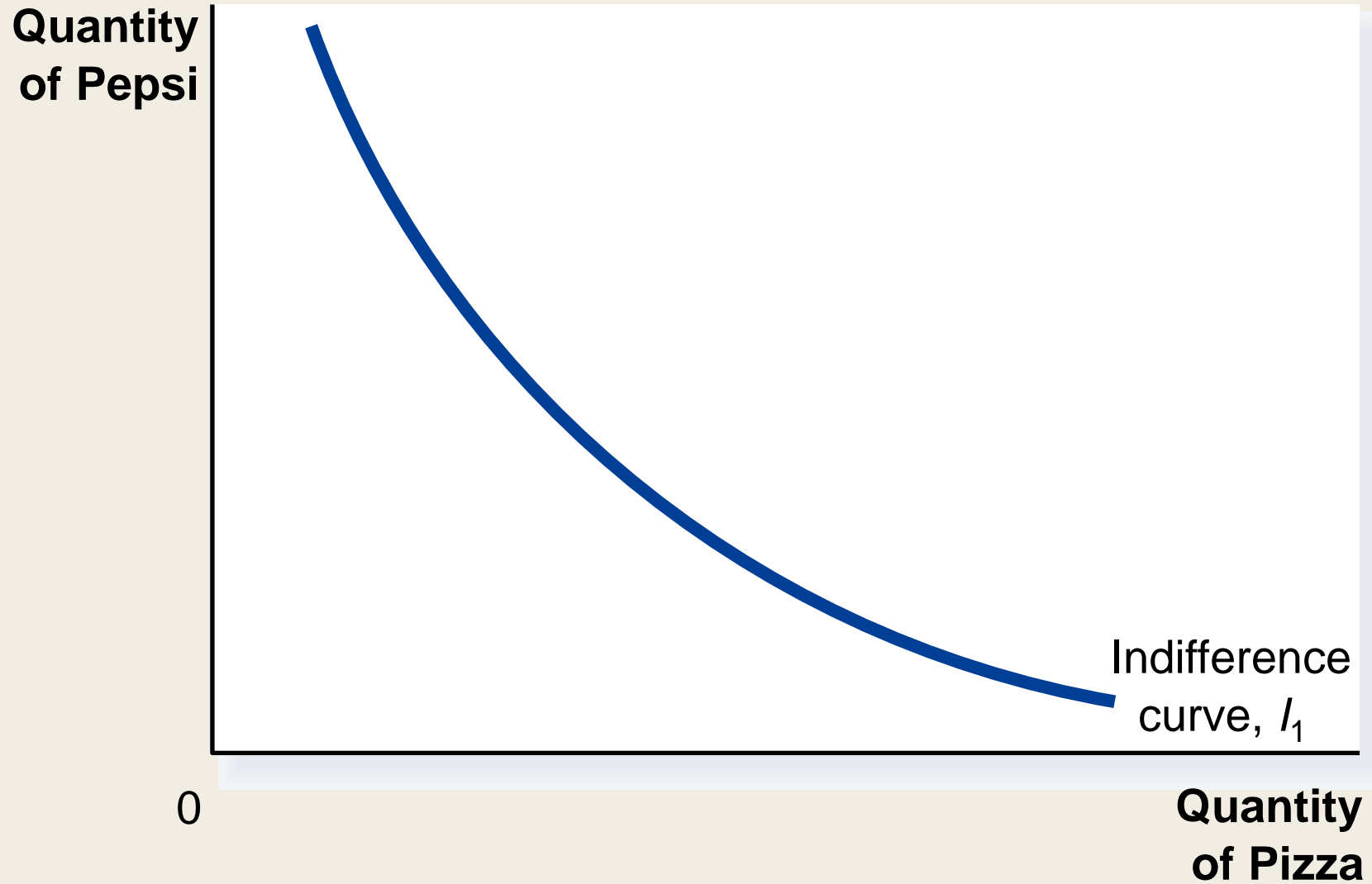
Figure 2 The Consumer's Preferences



Four Properties of Indifference Curves

- Property 2: Indifference curves are downward sloping.
 - A consumer is willing to give up one good only if he or she gets more of the other good in order to remain equally happy.
 - If the quantity of one good is reduced, the quantity of the other good must increase.
 - For this reason, most indifference curves slope downward.
 - Remember, a consumer is equally happy at all points along a given indifference curve.

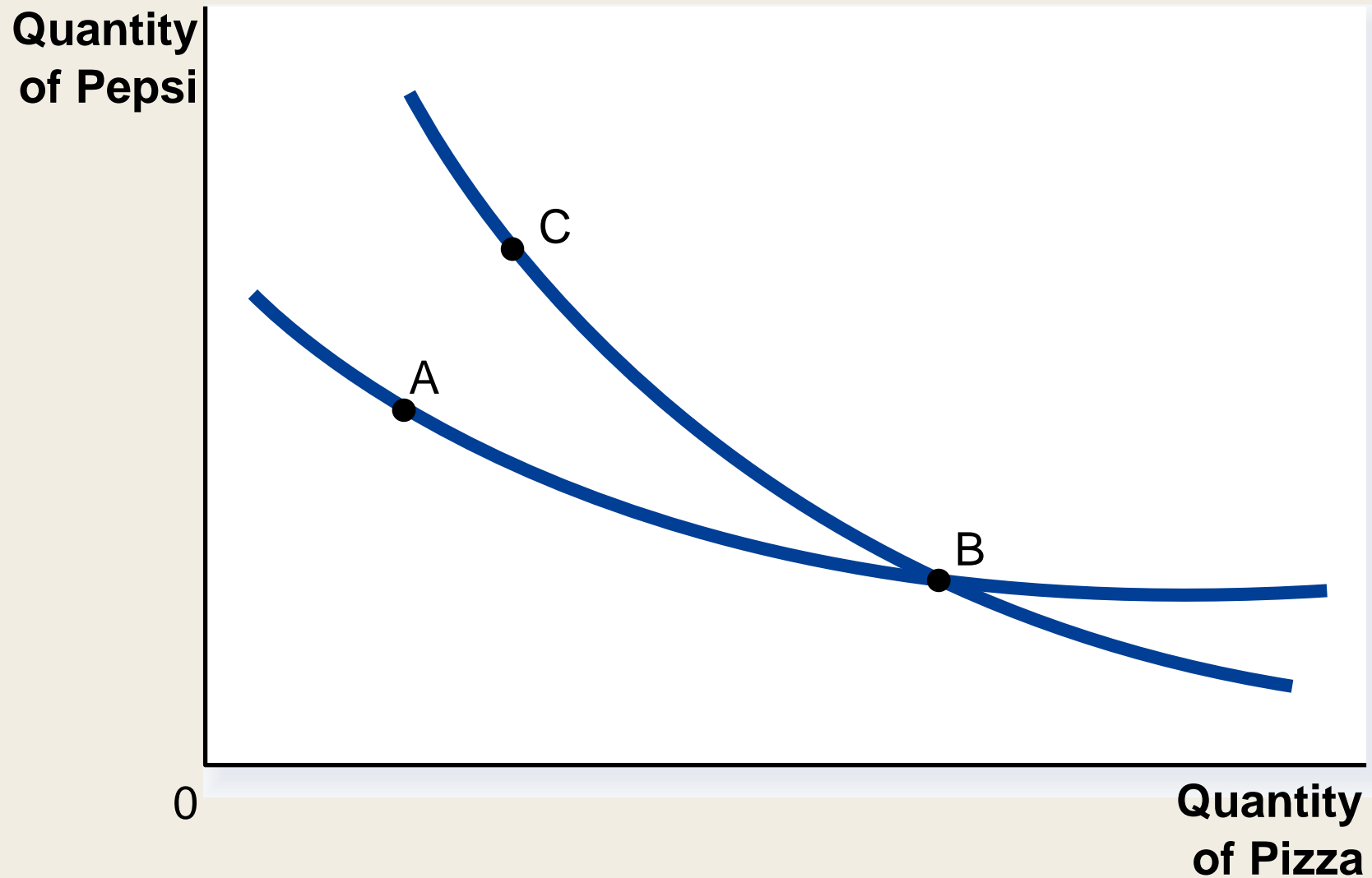
Figure 2 The Consumer's Preferences



Four Properties of Indifference Curves

- Property 3: Indifference curves do not cross.
 - Points A and B should make the consumer equally happy.
 - Points B and C should make the consumer equally happy.
 - This implies that A and C would make the consumer equally happy.
 - But C has more of both goods compared to A.

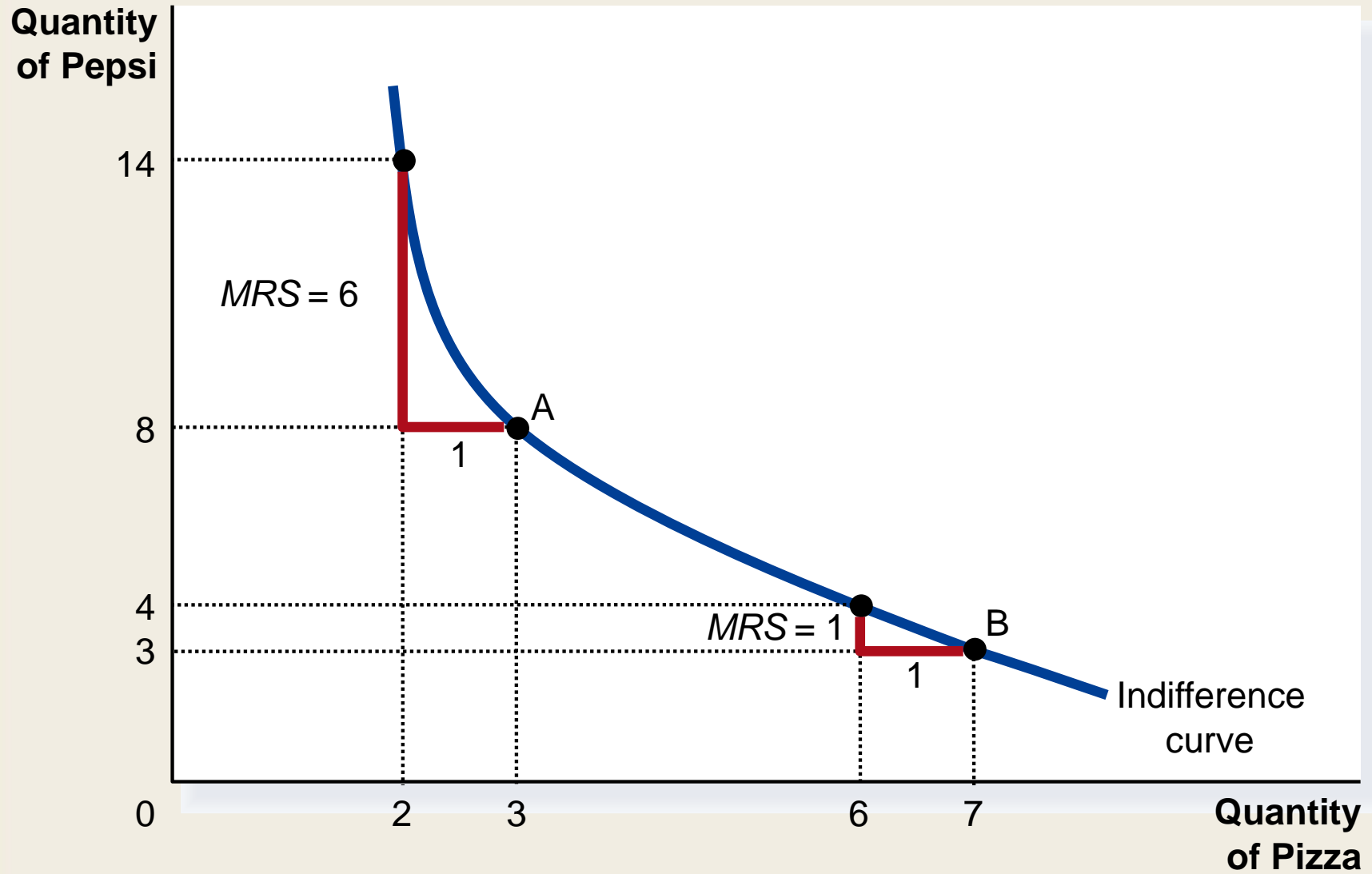
Figure 3 The Impossibility of Intersecting Indifference Curves



Four Properties of Indifference Curves

- Property 4: Indifference curves are bowed inward.
 - People are more willing to trade away goods that they have in abundance and less willing to trade away goods of which they have little.
 - These differences in a consumer's marginal substitution rates cause his or her indifference curve to bow inward.

Figure 4 Bowed Indifference Curves



Two Extreme Examples of Indifference Curves

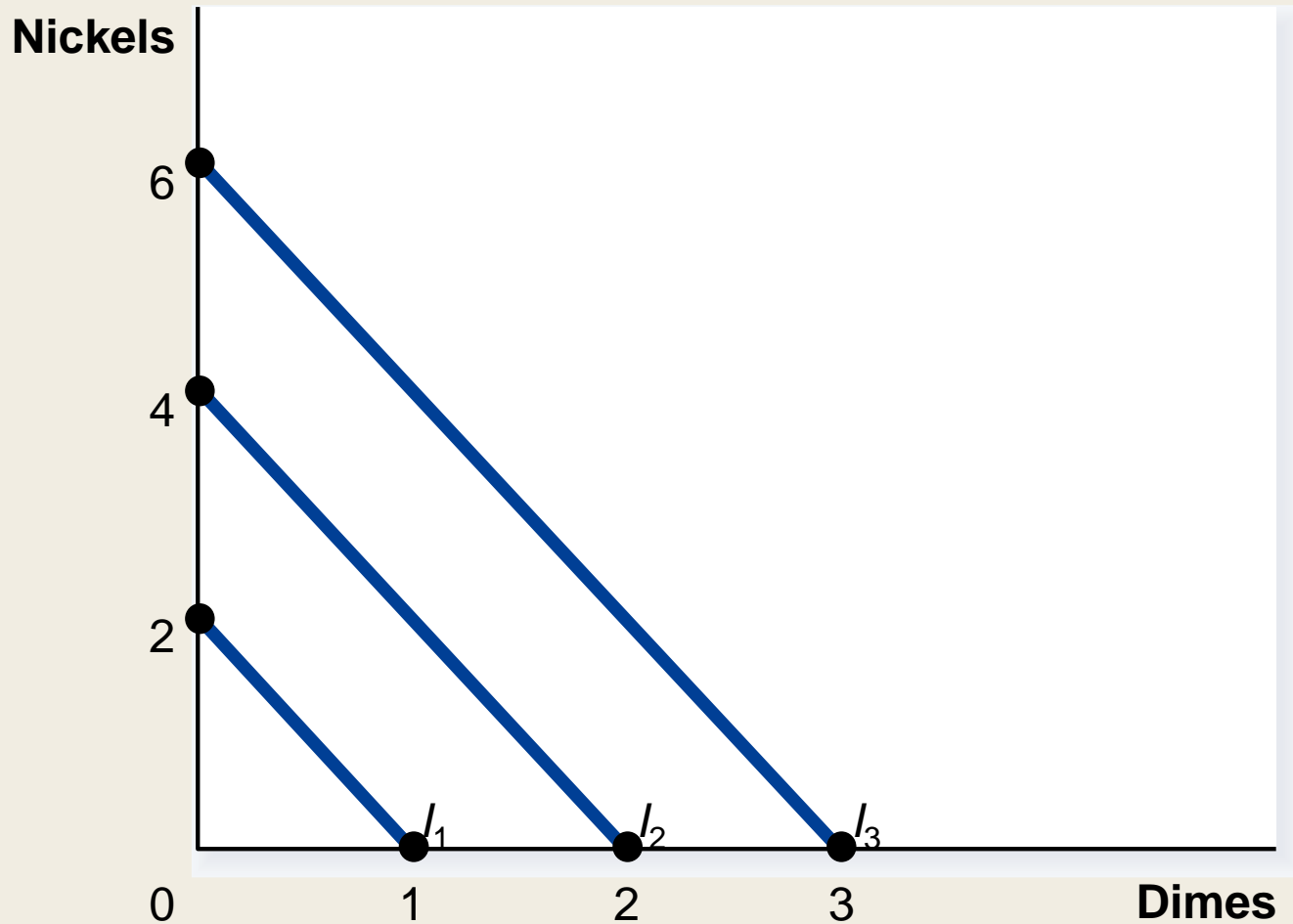
- Perfect substitutes
- Perfect complements

Two Extreme Examples of Indifference Curves

- Perfect Substitutes
 - Two goods with straight-line indifference curves are *perfect substitutes*.
 - The marginal rate of substitution is a fixed number.

Figure 5 Perfect Substitutes and Perfect Complements

(a) Perfect Substitutes

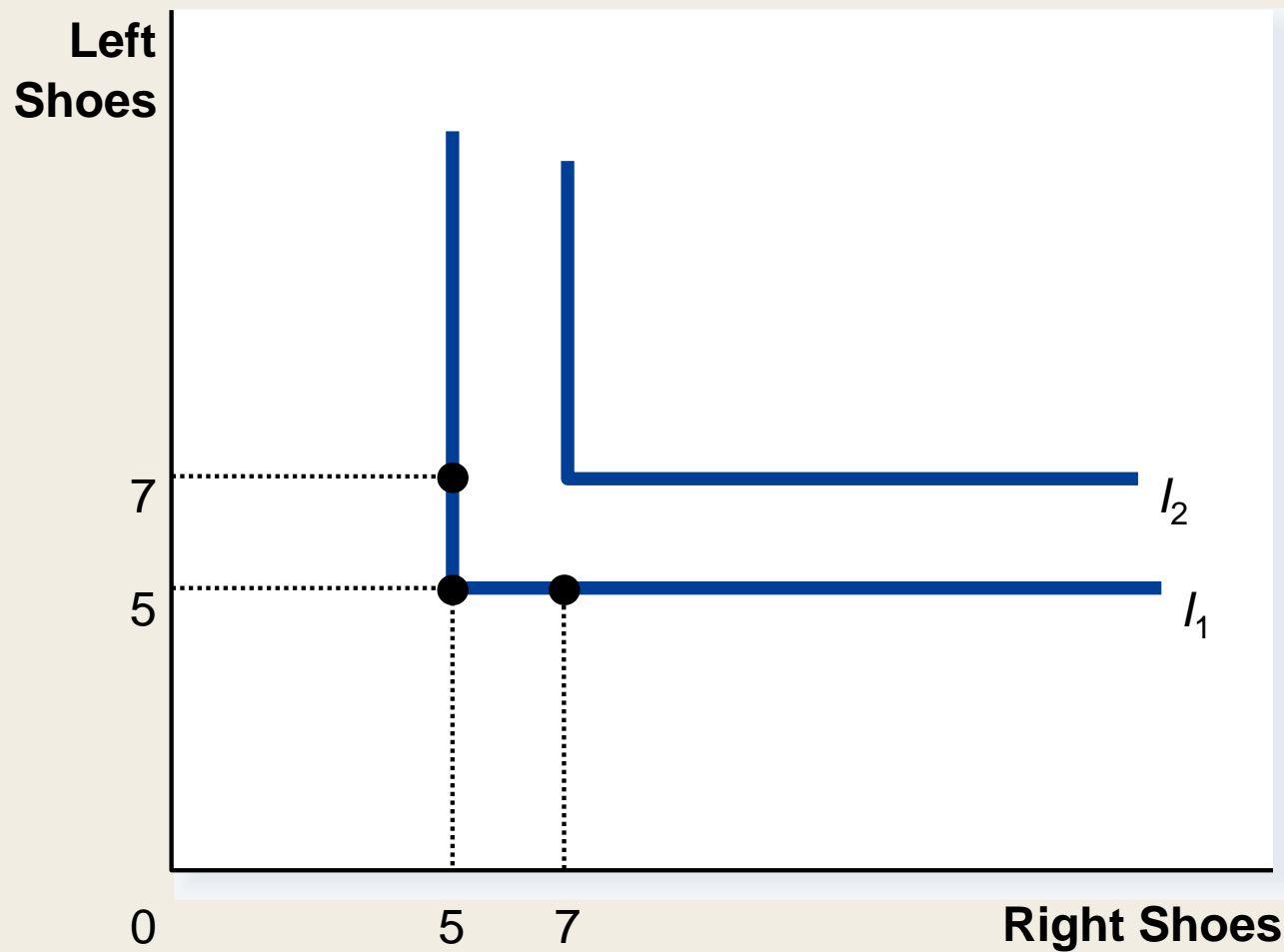


Two Extreme Examples of Indifference Curves

- Perfect Complements
 - Two goods with right-angle indifference curves are *perfect complements*.
 - Since these goods are always used together, extra units of one good, outside the desired consumption ratio, add no additional satisfaction.

Figure 5 Perfect Substitutes and Perfect Complements

(b) Perfect Complements





OPTIMIZATION: WHAT THE CONSUMER CHOOSES

- Consumers want to get the combination of goods on the highest possible indifference curve.
- However, the consumer must also end up on or below his budget constraint.

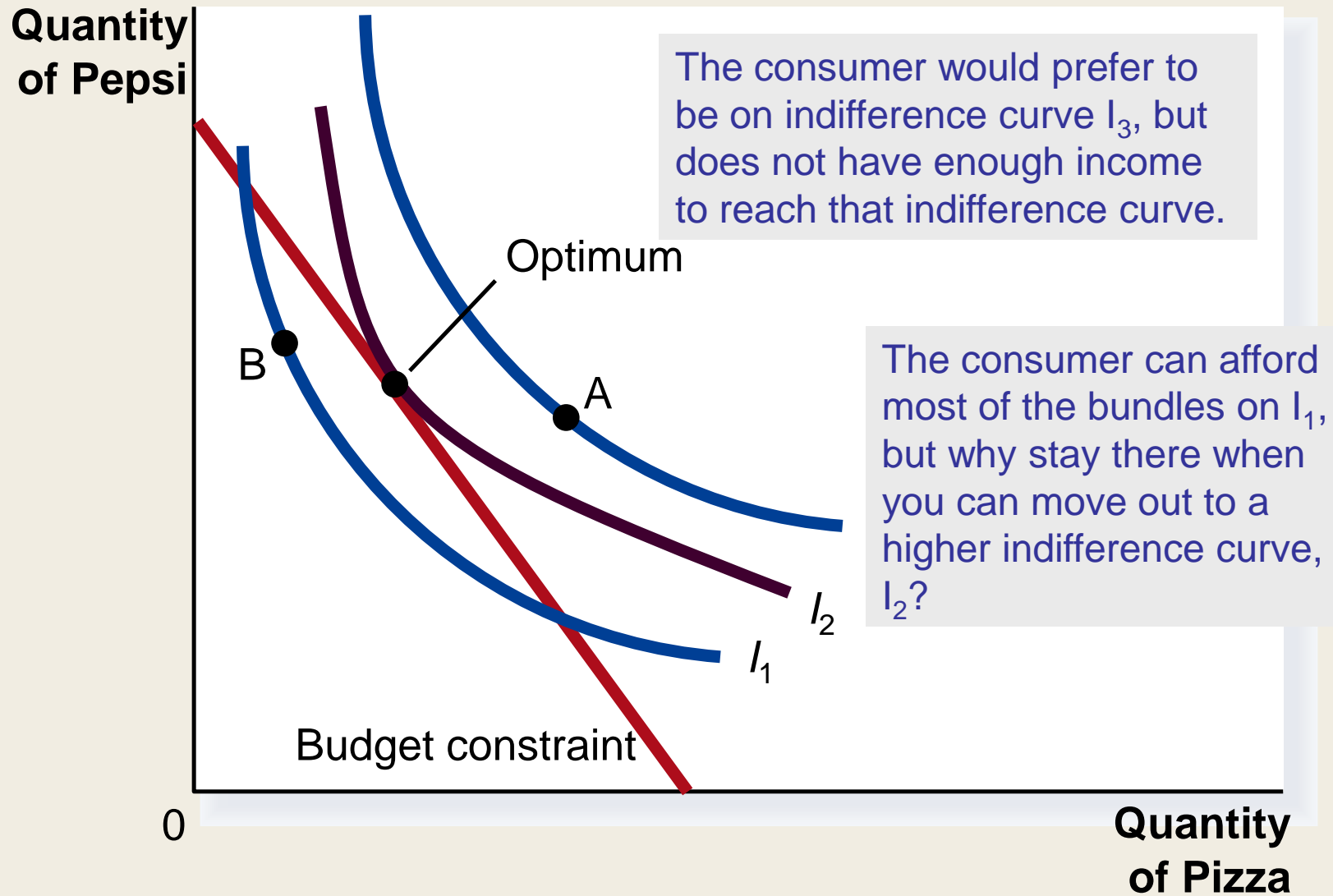
The Consumer's Optimal Choices

- Combining the indifference curve and the budget constraint determines the consumer's optimal choice.
- Consider a well-behaved indifference curve that is bowed inward.
- Consumer optimum occurs at the point where the highest indifference curve and the budget constraint are tangent.

The Consumer's Optimal Choice

- The consumer chooses consumption of the two goods so that the marginal rate of substitution equals the relative price.
- At the consumer's optimum, the consumer's valuation of the two goods equals the market's valuation.

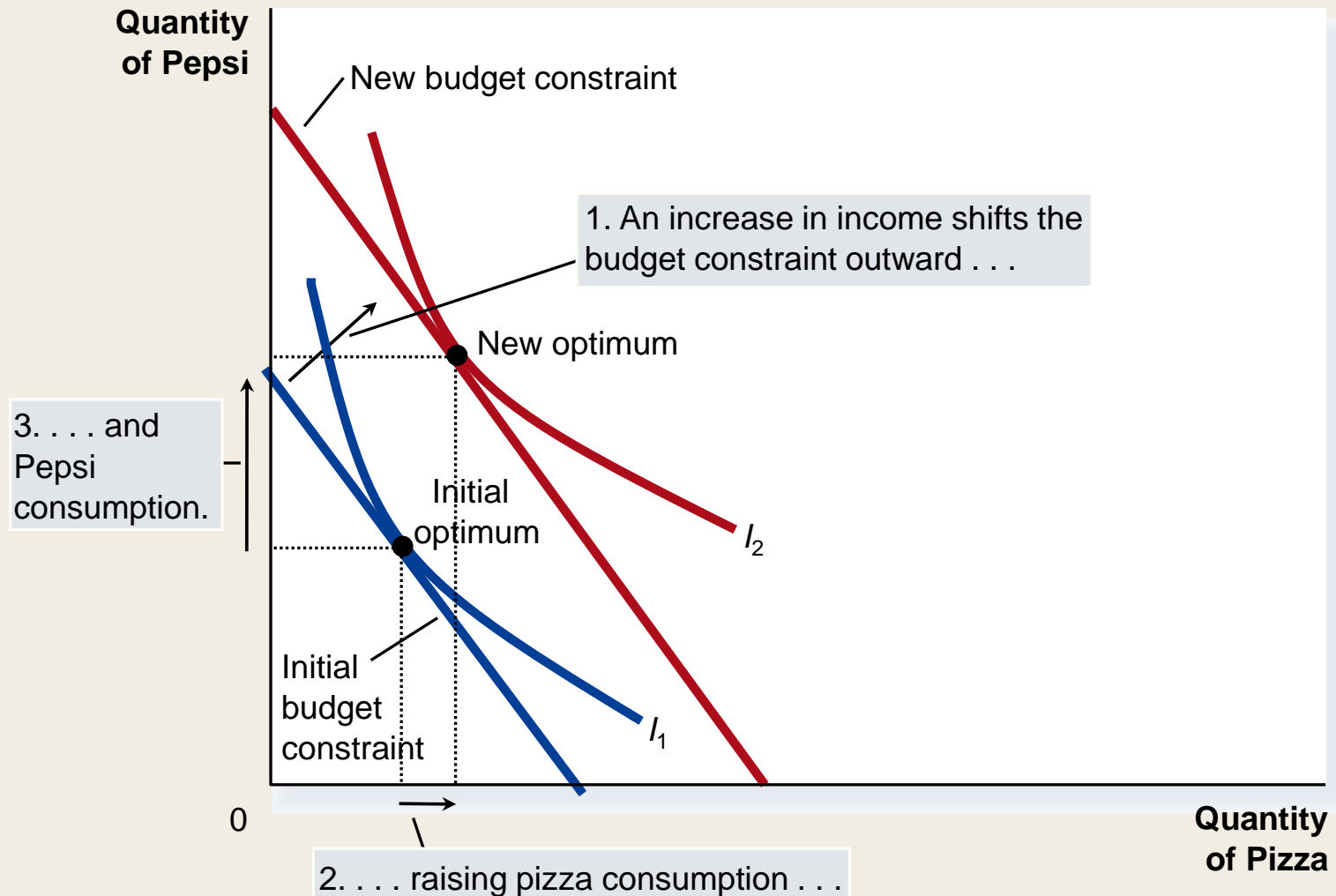
Figure 6 The Consumer's Optimum



How Changes in Income Affect the Consumer's Choices

- An increase in income shifts the budget constraint outward.
 - The consumer is able to choose a better combination of goods on a higher indifference curve.

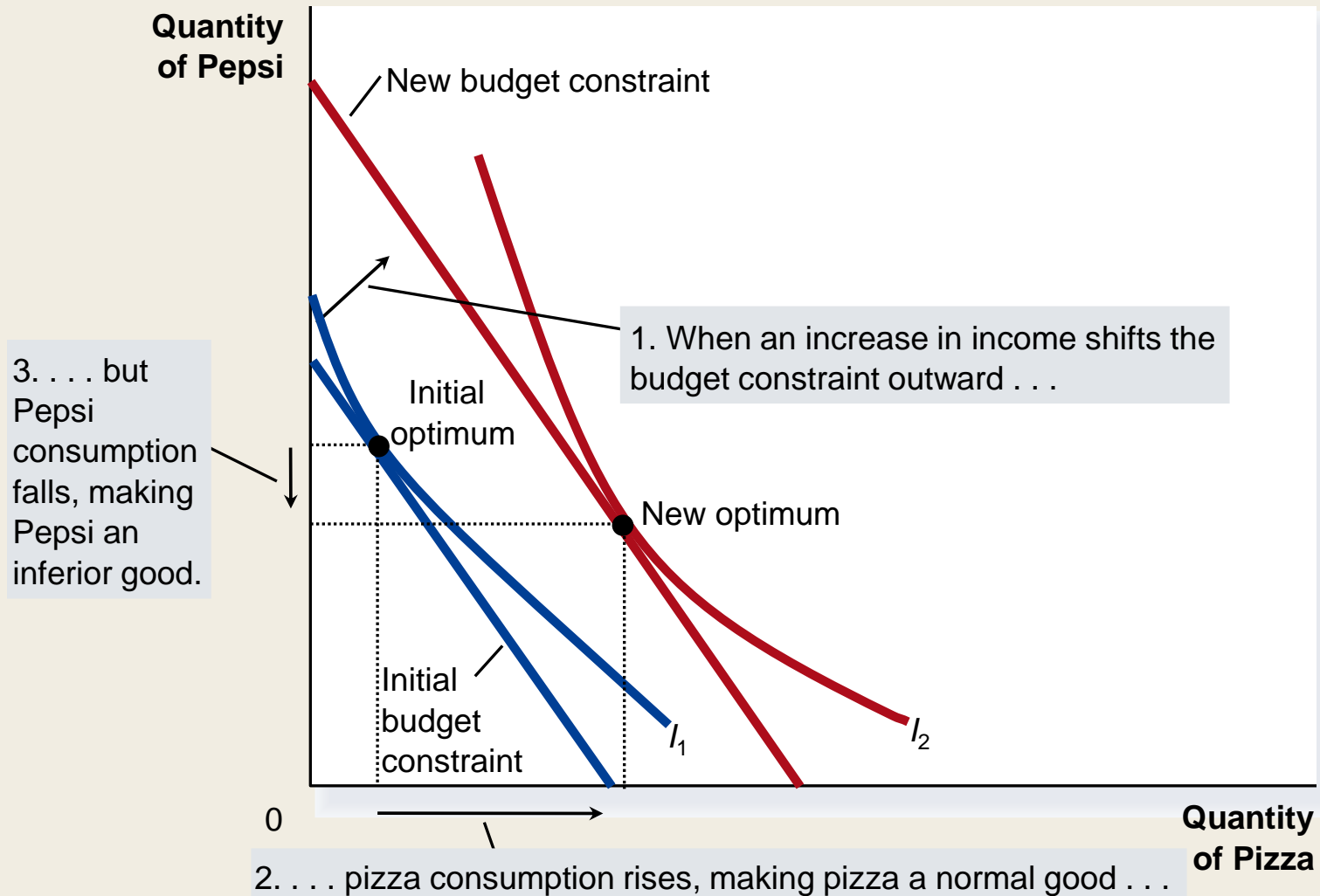
Figure 7 An Increase in Income



How Changes in Income Affect the Consumer's Choices

- Normal versus Inferior Goods
 - If a consumer buys more of a good when his or her income rises, the good is called a *normal good*.
 - If a consumer buys less of a good when his or her income rises, the good is called an *inferior good*.

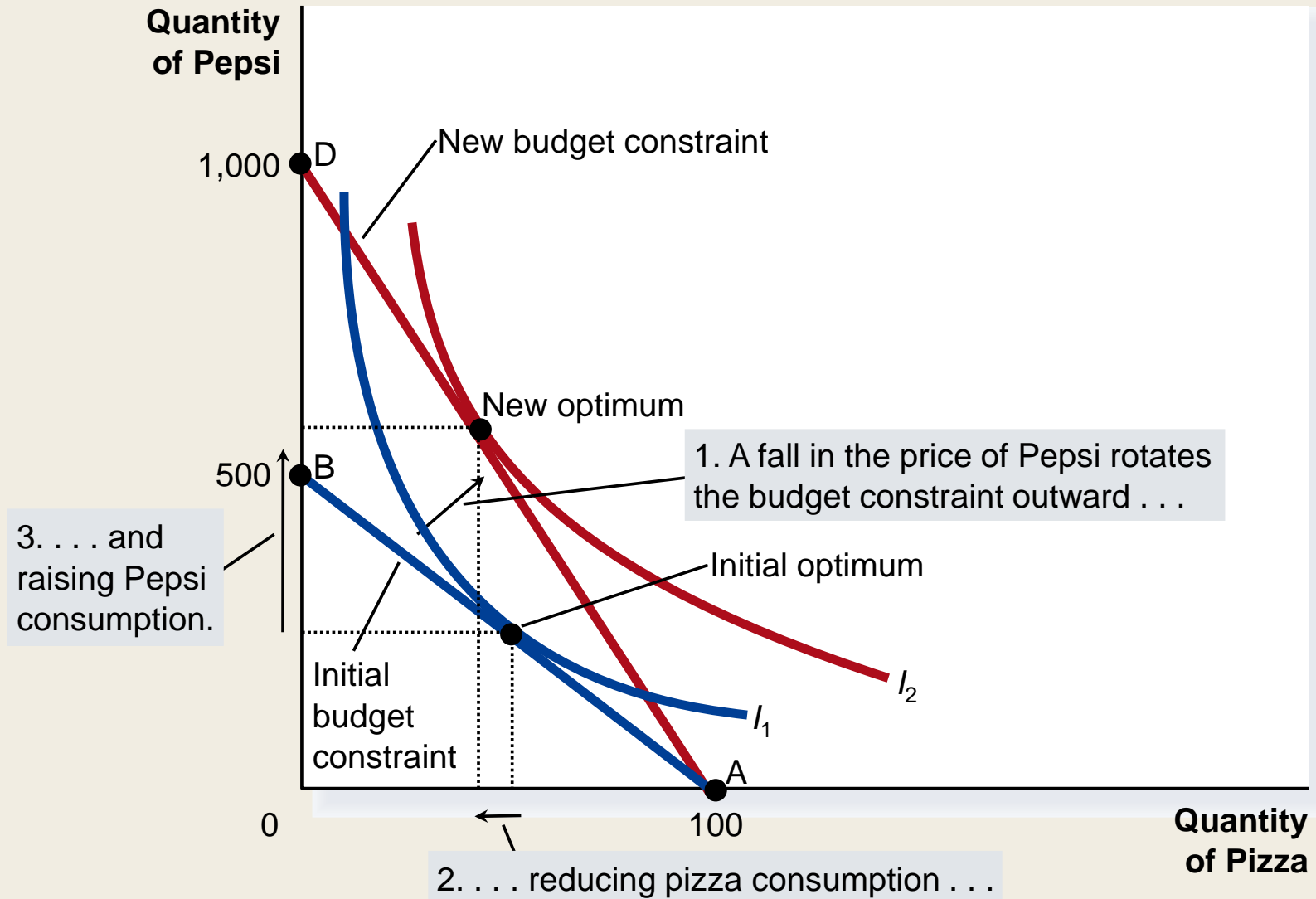
Figure 8 An Inferior Good



How Changes in Prices Affect Consumer's Choices

- A fall in the price of any good rotates the budget constraint outward and changes the slope of the budget constraint.

Figure 9 A Change in Price



Income and Substitution Effects

- A price change has two effects on consumption.
 - An income effect
 - A substitution effect

Income and Substitution Effects

- The Substitution Effect
 - The *substitution effect* is the change in consumption that results when a price change moves the consumer along an indifference curve to a point with a different marginal rate of substitution.
- The Income Effect
 - The *income effect* is the change in consumption that results when a price change moves the consumer to a higher or lower indifference curve.