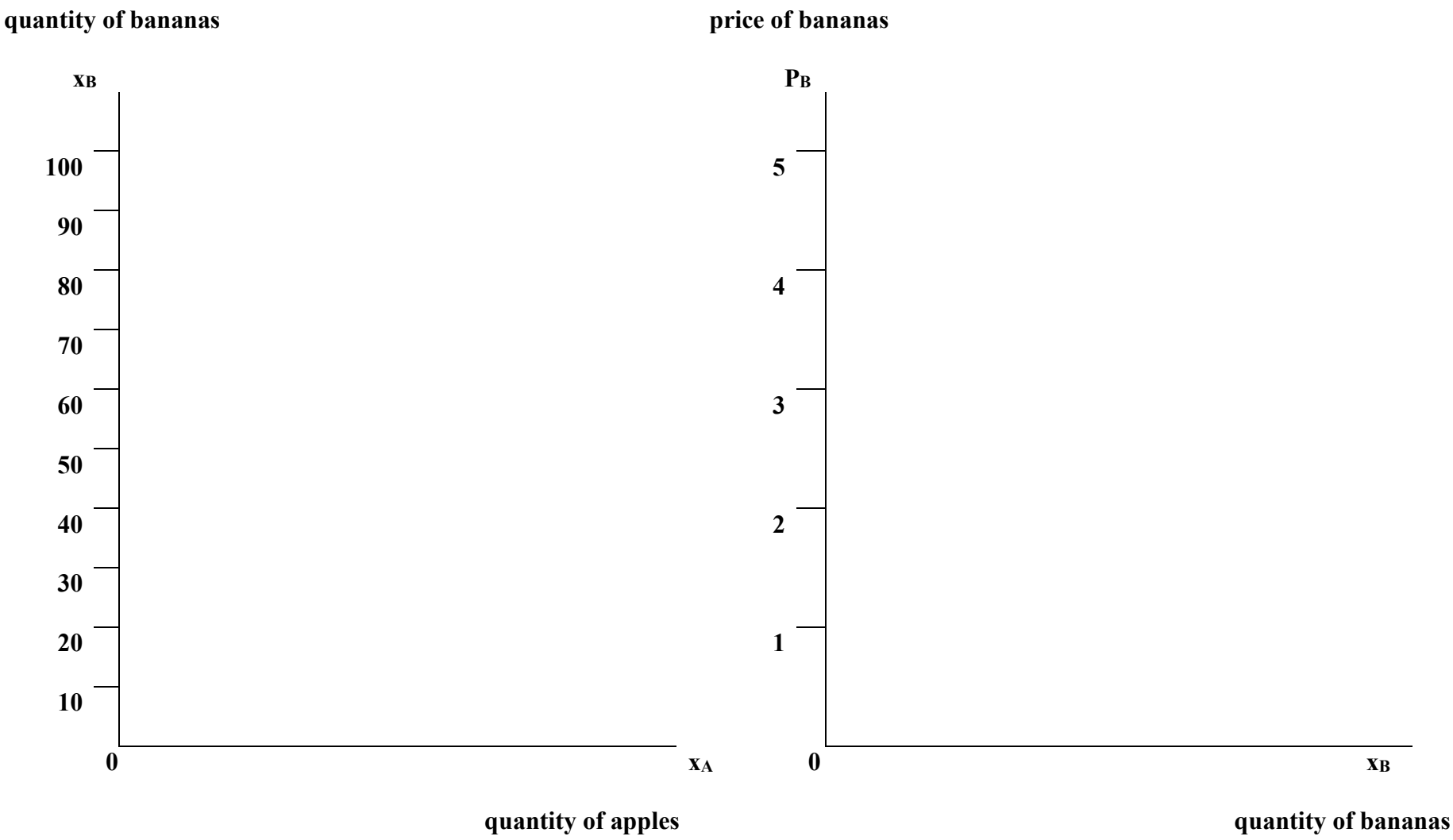
Deriving an Individual's Demand Curve



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Use the following information to illustrate the individual's optimal consumption decisions in the two diagrams on the previous page.

This individual has an income of I = 100 that he or she can spend on either apples or bananas.

Initially, the prices of the two goods are $p_A = 2$ and $p_B = 1$, respectively.

1. The individual consumes 20 apples in his/her initial consumer optimum.
   a) How many bananas does the individual consume?
   b) Draw this consumer optimum in the diagram on the left.
   c) How do you show this initial situation in the diagram on the right?

2. The price of bananas increases to $p_B = 2$. The individual reduces the consumption of apples. The new consumer optimum is at $x_A = 15$.
   a) How many bananas does the individual consume?
   b) Draw the new consumer optimum in the diagram on the left.
   c) Show the new situation in the diagram on the right.

3. The price of bananas increases further to $p_B = 4$. The individual reduces his/her consumption of bananas to $x_B = 15$.
   a) How many apples does the individual consume?
   b) Draw the new consumer optimum in the diagram on the left
   c) Show the new situation in the diagram on the right.