

1. According to paragraph 1, which of the following is true of the growth pattern of a tree?

- A. Early in a tree's life, woody tissue makes up less than 50 percent of its biomass.
- B. When a tree is no longer young, leaves account for about half of its total biomass.
- C. As the trunk and stems become thicker and heavier, they require less and less energy from the production system.
- D. The energy production system of a tree is greater than the biomass that it supports.

Paragraph 1: Trees and woody shrubs live a long time, which greatly influences the manner in which they distribute energy. Early in life, leaves make up more than one-half of their biomass; however, as trees age, they accumulate more woody growth. Trunks and stems become thicker and heavier, and the ratio of leaves to woody tissue changes. Eventually, leaves account for only 1 to 5 percent of the total mass of the tree. The production system (the leaf mass) that supplies the energy is considerably less than the rest of the biomass it supports. Thus, as the woody plant grows, much of the energy goes into support and maintenance, which increases as the plant ages.

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2. According to paragraph 2, how much energy does it take for a deciduous tree to produce leaves in the spring?

- A. More than it devotes to flowers, roots, and tissues that transport nutrients and water combined
- B. An amount equivalent to one-third of the total amount of energy it produces throughout the year
- C. As much as one-third of the energy it has stored up
- D. Only about one-third as much energy as it distributes to roots, bark, and tissues that transport nutrients and water during the same period

Paragraph 2: When deciduous trees (trees that lose their foliage in winter) produce leaves again in the spring, they expend up to one-third of their reserve energy on the growth and expansion of leaves. This expenditure is repaid as the leaves carry out photosynthesis during the spring and summer. After leaves, trees give preference to flowers; then tissues that transport nutrients and water, new leaf buds, deposits of starch in roots and bark, and finally, new flower buds.

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