

**Chapter  
23**
**Plant Structure and Function, *continued***
**Reinforcement and Study Guide**
**Section 23.2 Roots, Stems, and Leaves**

*In your textbook, read about roots and stems.*

Label the parts of the dicot root. Use these choices:

cortex

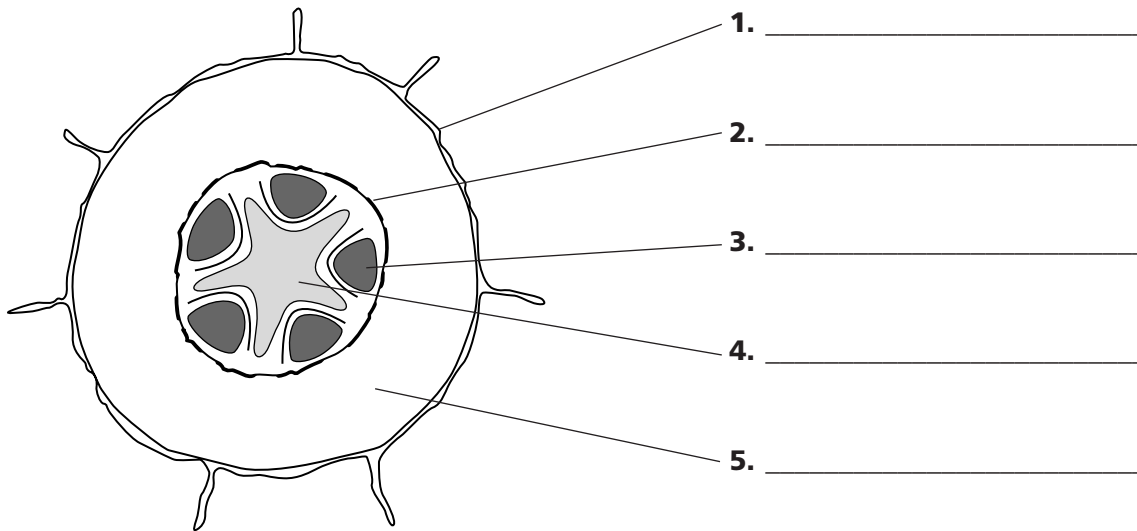
phloem

epidermis

endodermis

xylem

**Dicot Root**



For each statement below, write true or false.

- \_\_\_\_\_ 6. A root hair is a small extension of an epidermal, or outermost, cell layer of a dicot root.
- \_\_\_\_\_ 7. Layers of parenchyma cells make up the cortex of a dicot root and the central pith of a monocot root.
- \_\_\_\_\_ 8. Outside the endodermis is a tissue called the pericycle that develops vertical roots.
- \_\_\_\_\_ 9. Vascular cambium cells found at the center of a root grow more xylem and phloem cells that increase the size of the root.
- \_\_\_\_\_ 10. Behind the root tip are cell-producing growth tissues called the root cap.
- \_\_\_\_\_ 11. The difference between roots and stems lies in the way they transport water.
- \_\_\_\_\_ 12. Primary growth in a stem occurs in the apical meristem.

**Chapter**  
**23**
**Plant Structure and Function, continued**
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*In your textbook, read about stems and leaves.*

**Circle the letter of the response that best completes the statement.**

- 13.** Many wildflowers with soft, green stems are plants that have
- |                        |                             |
|------------------------|-----------------------------|
| <b>a.</b> woody stems. | <b>b.</b> herbaceous stems. |
| <b>c.</b> woody roots. | <b>d.</b> all of the above. |
- 14.** The functions of a plant's stem include
- |  |                                 |
|--|---------------------------------|
| <b>a.</b> transporting sugar.              | <b>b.</b> supporting the plant. |
| <b>c.</b> transporting water and minerals. | <b>d.</b> all of the above.     |
- 15.** Any portion of the plant that stores sugars is called a
- |                     |                      |
|---------------------|----------------------|
| <b>a.</b> petiole.  | <b>b.</b> mesophyll. |
| <b>c.</b> root cap. | <b>d.</b> sink.      |
- 16.** The movement of sugars from the leaves through the phloem is called
- |                           |                          |
|---------------------------|--------------------------|
| <b>a.</b> photosynthesis. | <b>b.</b> transpiration. |
| <b>c.</b> translocation.  | <b>d.</b> food storage.  |

*In your textbook, read about the leaves of a plant.*

**Use each of the terms below just once to complete the passage.**

<b>stomata</b>	<b>extend</b>	<b>cuticle</b>	<b>transpiration</b>	<b>epidermis</b>
<b>veins</b>	<b>stem</b>	<b>petiole</b>	<b>photosynthesis</b>	<b>mesophyll</b>

There are many parts to a leaf. Grass leaves grow right out of the **(17)** \_\_\_\_\_, but other leaves are connected to the stem by a stalk called the **(18)** \_\_\_\_\_.

The petiole is made of vascular tissues that **(19)** \_\_\_\_\_ up into the leaf to form **(20)** \_\_\_\_\_.

The outer surface of a leaf has a **(21)** \_\_\_\_\_ that covers the epidermis. Inside the epidermis are two layers of photosynthetic cells that make up the **(22)** \_\_\_\_\_. Cells in the palisade layer have many chloroplasts and carry out most of the leaf's **(23)** \_\_\_\_\_. Leaves have a(n) **(24)** \_\_\_\_\_ with a waxy cuticle and **(25)** \_\_\_\_\_ help prevent water loss. The loss of water through the stomata is called **(26)** \_\_\_\_\_.