

APOLLO

Cell specialization

SL

Biology

First assessment 2025

9 questions | questions

10. Which term describes very early-stage embryonic stem cells in a mouse?

- A. Totipotent
- B. Pluripotent
- C. Multipotent
- D. Unipotent

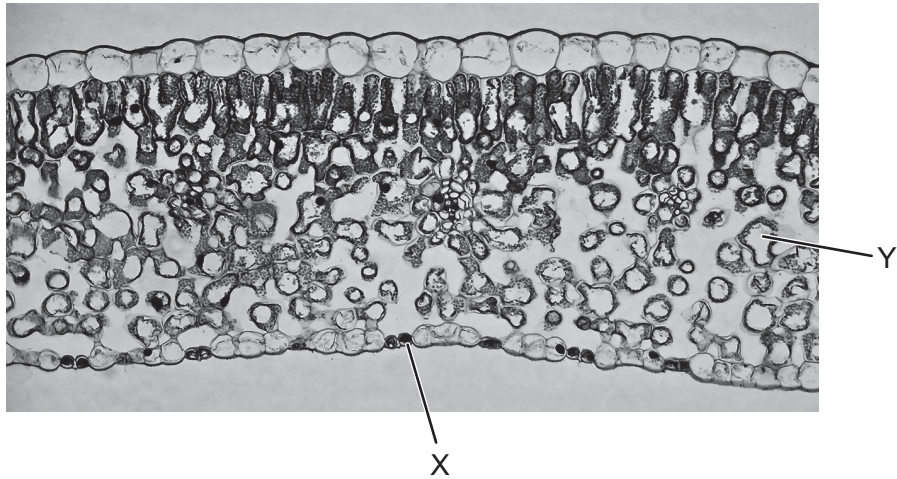
Turn over

- 10.** What results from an unspecialized cell experiencing gradients of signalling chemicals?
- A. Cell differentiation
 - B. Meiosis
 - C. Saltatory conduction
 - D. DNA replication

Turn over

- 11.** Which is a description of stem cells?
- A. Hair follicle stem cells are pluripotent.
 - B. Stem cells in bone marrow are multipotent.
 - C. Very early embryo stem cells are pluripotent.
 - D. Late embryo stem cells are totipotent.

15. A cross section of a lily leaf (*Lilium spp.*) is shown.



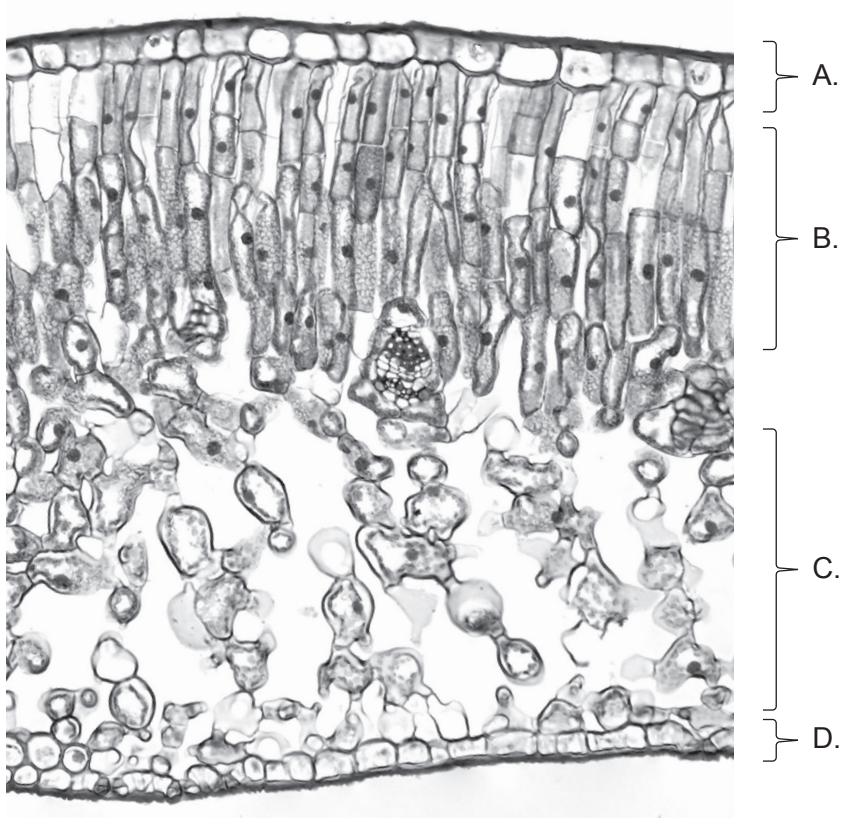
Which leaf structures are represented by labels X and Y?

	X	Y
A.	palisade mesophyll cell	phloem cell
B.	epidermal cell	palisade mesophyll cell
C.	spongy mesophyll cell	guard cell
D.	guard cell	spongy mesophyll cell

10. Which specialized cell has the largest volume?

- A. Egg cell
- B. Sperm cell
- C. Red blood cell
- D. White blood cell

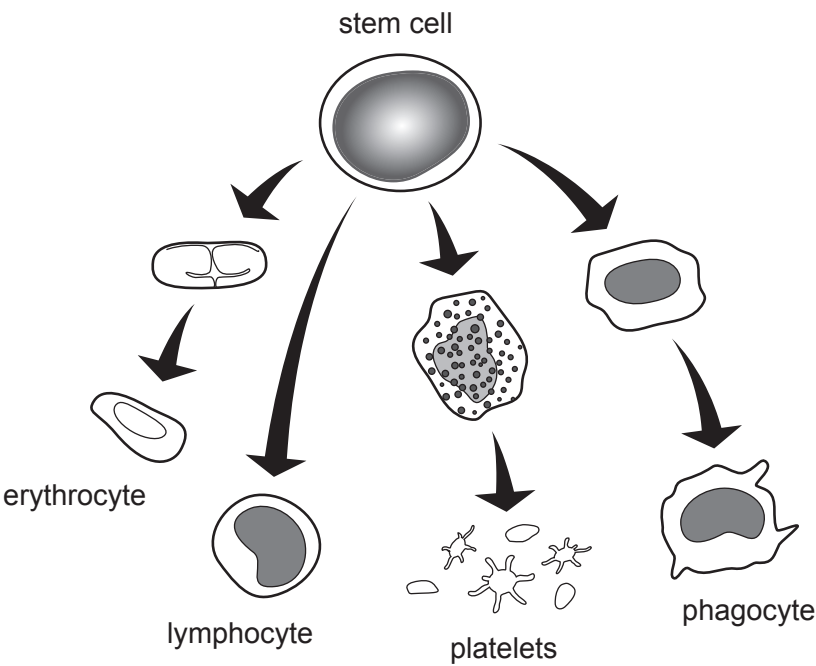
14. The image shows the transverse section of a leaf. Which letter identifies the palisade mesophyll?



8. What is a reason that both phloem sieve tube elements and human red blood cells are considered atypical?
- A. They have no cytoplasm
 - B. Their DNA is free in the cytoplasm
 - C. They do not have a nucleus
 - D. All membrane-bound organelles are missing

Turn over

9. Stem cells can differentiate to produce a variety of cell types in the adult human body.



Which description correspondss to the stem cell in the diagram?

	Type	Location
A.	totipotent	bone marrow
B.	multipotent	bone marrow
C.	totipotent	blood
D.	multipotent	blood

10. Which is a feature of phloem sieve tube cells?

- A. Numerous chloroplasts
- B. No nucleus
- C. Lignified walls
- D. No cytoplasm