

2 In a study of plant structure, a leaf cell and a cell from a root tip were observed.

(a) Name **one** structure that may be found in a leaf cell that identifies it as **both** a eukaryotic cell **and** a plant cell.

(1)

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(b) The cell from the root tip was observed to be undergoing anaphase of mitosis.

(i) Describe **anaphase** of mitosis.

(3)

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(ii) During anaphase, the cell from the root tip did not have a nucleus but was still considered to be eukaryotic. Suggest **two** reasons why this cell was still considered to be eukaryotic.

(2)

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(c) The table below shows the number of cells at each stage of the cell cycle in one sample of tissue taken from the growing region of a plant root.

Stage of the cell cycle	Number of cells in each stage	Percentage of cells in each stage (%)
Interphase	47	78.3
Prophase	3	5.0
Metaphase		3.3
Anaphase	1	1.7
Telophase	3	5.0
Cytokinesis		6.7
TOTAL	60	100

- (i) Complete the table by calculating the number of cells undergoing metaphase and cytokinesis. Give your answer to the nearest whole number. (2)
- (ii) Using the table above, suggest which stage of the cell cycle takes the longest. Give a reason for your answer. (2)

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- (iii) Suggest **one** reason why your answer to (c)(ii) may be unreliable. (1)

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(Total for Question 2 = 11 marks)

