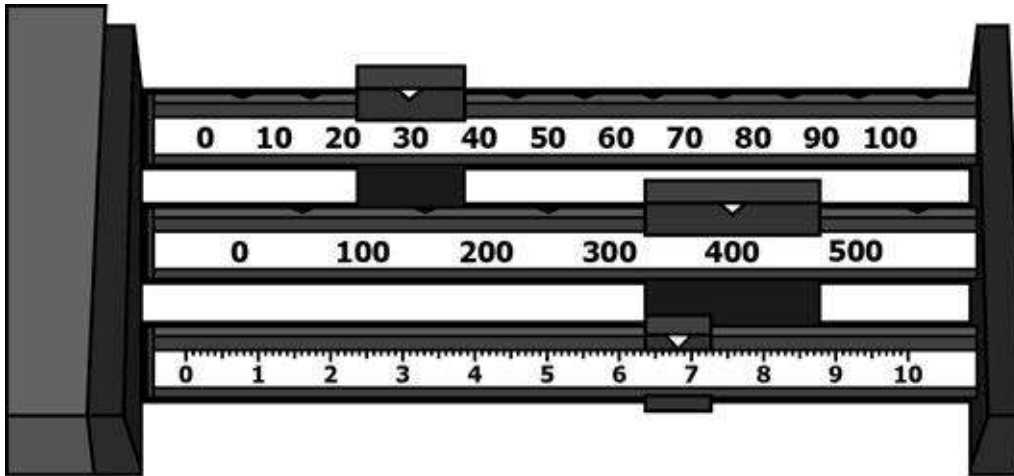


SCI-LS  
1st 9 Weeks Benchmark Study Guide

[Exam ID:1MPBP8] Scan Number:1396

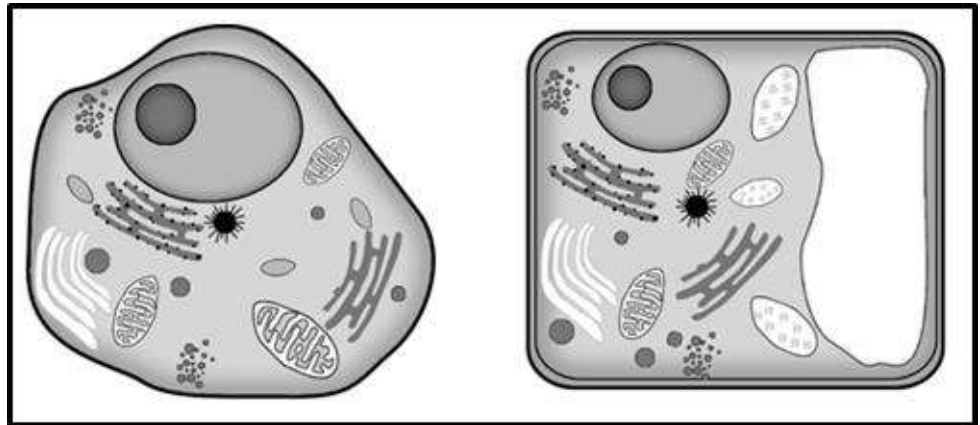
1



The mass of a rock was taken on a triple beam balance and the measurement is shown. What is the mass of the rock?

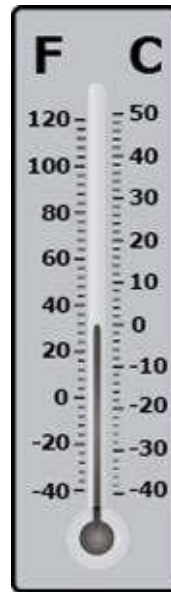
- A 436.0 g
- B 430.6 g
- C 437.0 g
- D 436.8 g

2



What is one of the major differences between the animal cell and plant cell?

- F The plant cell does not have a cytoplasm, but the animal cell does.
- G The animal cell does not have a cell wall, but the plant cell does.
- H The plant cell does not have a cell vacuole, but the animal cell does.
- J The animal cell does not have a cell membrane, but the plant cell does.



**At the shown temperature, water will —**

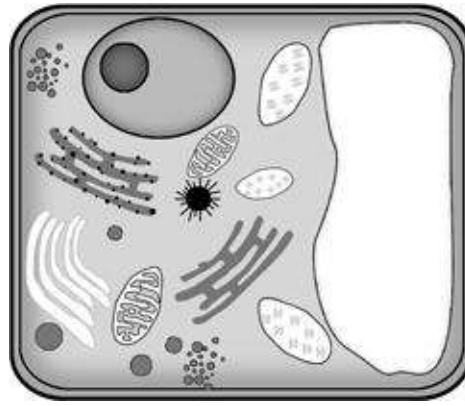
- A freeze
- B evaporate
- C condense
- D boil

**4 A graduated cylinder contains exactly 40 mL of water. A rock was dropped into the cylinder of water. The water level rose to 52 ml. What is the volume of the rock?**

- F 12 ml
- G 52 ml
- H 40 ml
- J 92 ml

**5 The clear, jellylike substance in cells is called —**

- A plasma.
- B the vacuoles.
- C lymph.
- D cytoplasm.



**What type of cell is pictured?**

- F Nerve cell
- G Animal cell
- H Blood cell
- J Plant cell

**7 Cells of plants and animals have some of the same organelles. Which of these organelles could be found in *both* plant and animal cells?**

- A cell wall and chloroplasts
- B vacuole and cell wall
- C vacuole and chloroplasts
- D mitochondria and ribosomes

**8 When measuring the mass of a baby mouse, what metric unit should be used?**

- F Degrees Celsius
- G Kilometer
- H Milliliter
- J Gram

**9 According to cell theory, which statement is NOT true?**

- A Living cells come only from other living cells.
- B Cells are the basic units of structure and function in living things.
- C All living organisms are made of one or more cells.
- D Cells can only be seen with a compound light telescope.

**10 All of the following scientists contributed to cell theory EXCEPT —**

- F Robert Hooke
- G Matthias Schleiden
- H Theodor Schwann
- J Charles Darwin

- 11 **Twenty years after M.J. Schleiden and Theodor Schwann published separate conclusions on the cell theory, Rudolf Virchow proposed that —**
- A cells form only from pre-existing cells
  - B all cells can trace their ancestry back to ancient times
  - C bacteria can form in sterile broth
  - D cells are the building blocks of life
- 12 **What is the basic unit of liquid volume in the metric system?**
- F Meter
  - G Liter
  - H Celsius
  - J Gram
- 13 **In a plant, cells function together to form tissues that are long and hollow. These tissues are used to transport \_\_\_\_\_ and water throughout the cell.**
- A glucose
  - B oxygen
  - C blood
  - D chlorophyll
- 14 **Which cell structure is referred to as the gatekeeper because it directs substances to move into and out of the cell?**
- F Vacuole
  - G Nucleus
  - H Cell membrane
  - J Cell wall
- 15 **The International System of Units —**
- A is a standardized system used only in the United States
  - B contains units based on multiples of 10
  - C only works when a scientist is measuring mass
  - D involves multiplying and dividing by 2.8

- 16 Which statement was NOT included in the cell theory?**
- F Living cells come only from other living cells.
  - G Each cells contains a cell membrane, cytoplasm, nucleus, mitochondrion, and endoplasmic reticulum.
  - H Cells are the smallest structure of living things that can perform the functions necessary for life.
  - J All living things are composed of cells.
- 17 A plant's green color is due to the presence of which organelle?**
- A Chloroplast
  - B Mitochondrion
  - C Nucleus
  - D Vacuole
- 18 What structure surrounds and supports plant cells but is absent in animal cells?**
- F Cell wall
  - G Nucleic acid
  - H Nuclear membrane
  - J Cell membrane
- 19 The jelly-like substance in the cell is called —**
- A cvtokinesis
  - B chromosomes
  - C lysosomes
  - D cytoplasm

20 Which instrument is credited for helping scientists develop cell theory?

F



G



H



J



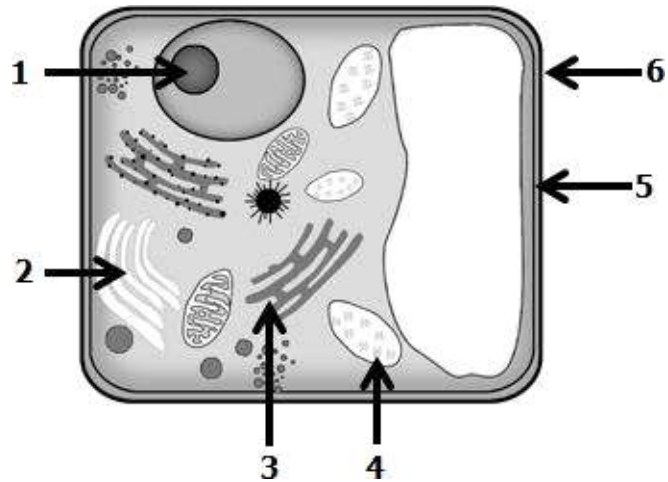
21 When comparing a plant cell to an animal cell, only the plant cell will contain —

- A ribosomes
- B chromosomes
- C chloroplasts
- D mitochondria

22 Which statement is correct?

- F Plant cells and animal cells contain all of the same organelles.
- G Plant cells have a cell wall but animal cells do not.
- H Animal cells have much larger vacuoles than plant cells.
- J Animal cells have chloroplasts and plant cells do not.

23

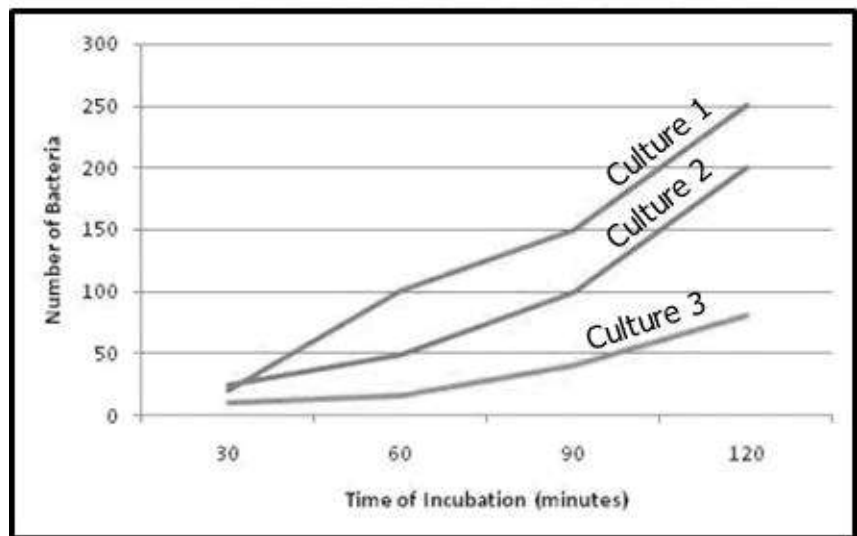


If Structure 5 is the cell membrane, then structure 6 is the —

- A cell wall
- B vacuole
- C nucleus
- D cytoplasm

24

Growth of Bacteria Over Time



The dependent variable in this experiment is —

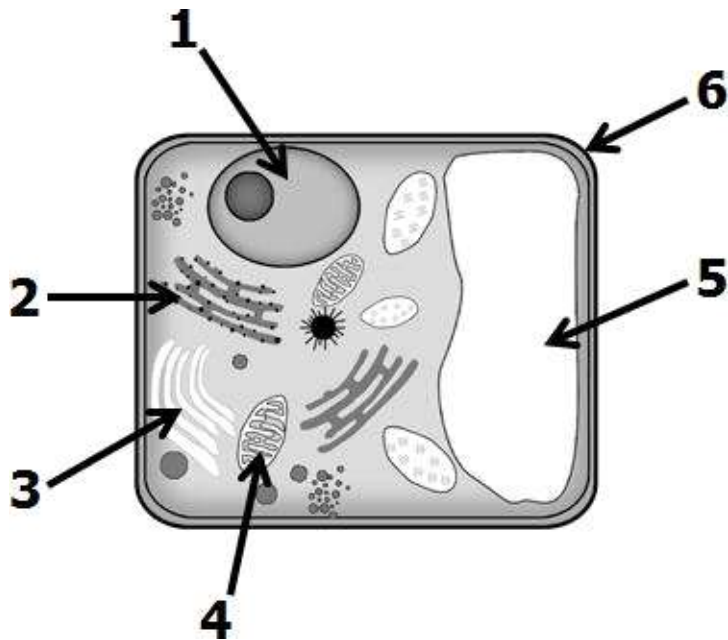
- F type of bacteria
- G Time of incubation
- H Culture number
- J Number of bacteria

**Sea Otter Population**

Year	# of Sea Otters
1940	57
1950	52
1960	50
1970	40
1980	30
1990	30
2000	20

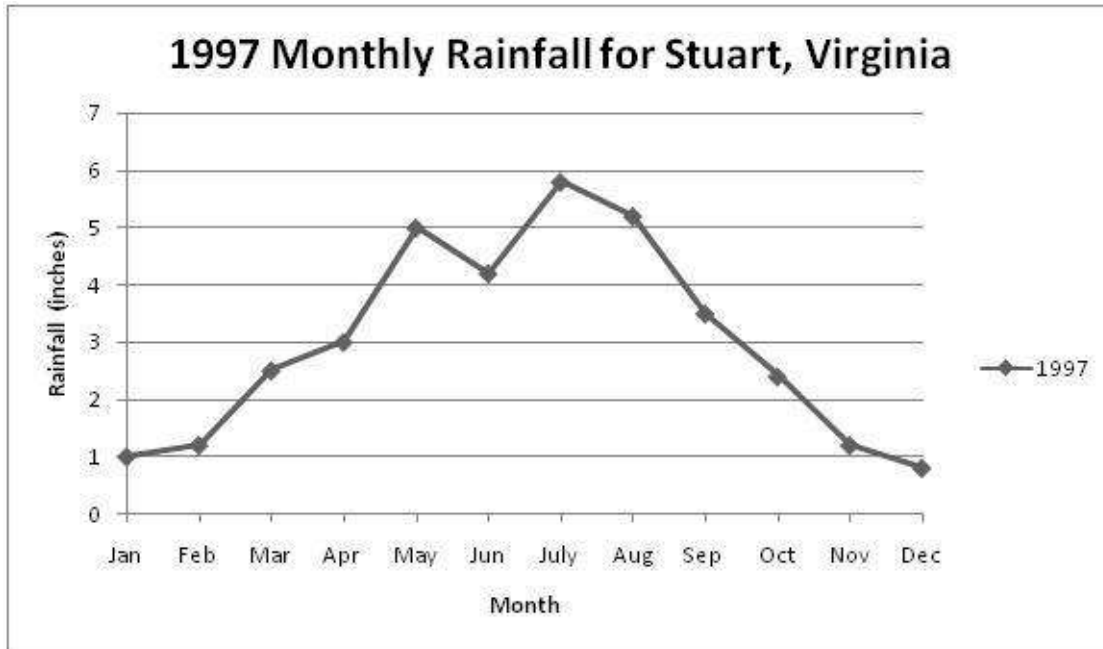
**What type of graph would best represent the following data?**

- A Bar graph
- B Pie chart
- C Line graph
- D Pictograph



**In the plant cell pictured above, what is the function of Structure 6?**

- F To control what enters and leaves the cell
- G To protect and support the cell
- H To direct cell activities
- J To store substances

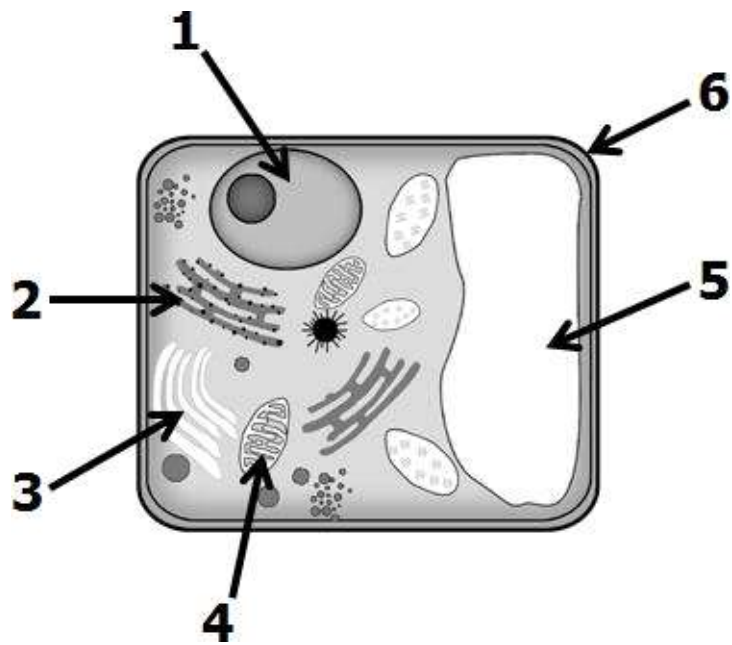


**According to the graph, Stuart received the majority of its rainfall during which season?**

- A Spring
- B Summer
- C Winter
- D Fall

**28 Elin is conducting a scientific investigation in which she measures a certain type of plant's growth in response to different amounts of fertilizer. What is the independent variable?**

- F Amount of fertilizer
- G Plant growth
- H Type of plant
- J Temperature of the fertilizer



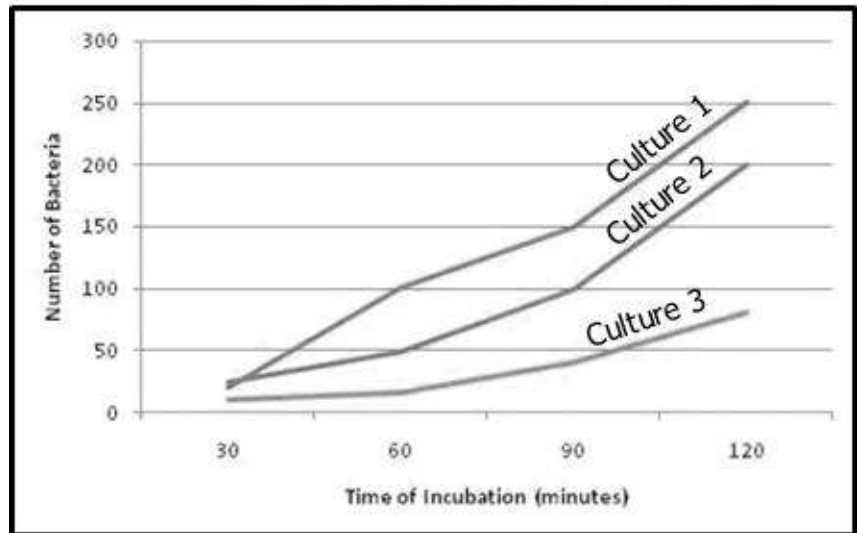
**What is the function of Structure 5?**

- A To direct cell activities
- B To store substances
- C To control what enters and leaves the cell
- D To protect and support the cell

30 **Mrs. Alder's class wants to do an experiment to find out if an increase in temperature will increase a squirrel's metabolism. All of the following are variables in this experiment EXCEPT —**

- F temperature
- G metabolism
- H the squirrel
- J the year

### Growth of Bacteria Over Time

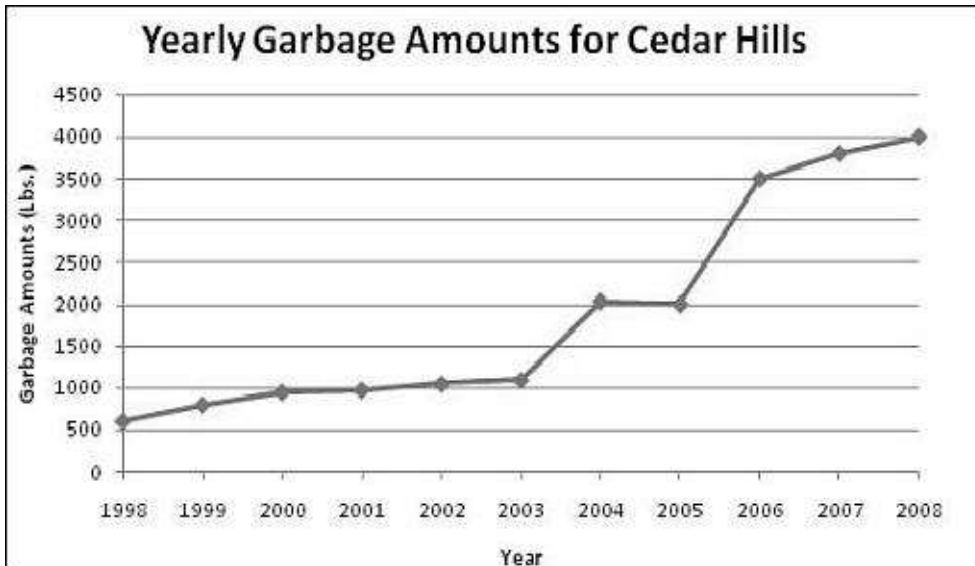


**The independent variable in this experiment is —**

- A number of bacteria
- B incubation time
- C culture number
- D type of bacteria

**32 John and Emily were experimenting with the effects of road salt on plant growth. To do this, they watered plants daily with the same amount of salt water. They could *best* improve their experiment by—**

- F adding food color to see how far the salt penetrates the plants
- G increasing the amount of salt added to the water each day
- H watering half the plants with pure water and half with salt water
- J cooling the salt water before watering the plants



**According to the graph below, how many more pounds of garbage was collected at Cedar Hills in 2008 than in 2004?**

- A 2000 lbs.
- B 1000 lbs.
- C 3000 lbs.
- D 2750 lbs.

**34 Jackie performs an experiment on how the type of music played in a room can affect plant growth. In her experiment, the independent variable is the —**

- F height of plant
- G type of music
- H type of plant
- J color of flower

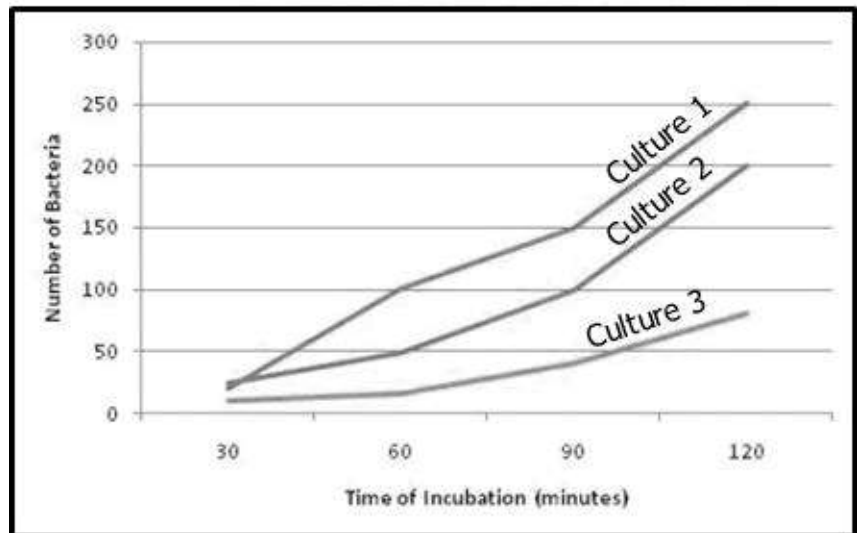
**35 Alicia is testing the effectiveness of different brands of antibacterial hand sanitizers. What is the independent variable in Alicia's experiment?**

- A The different brands of hand sanitizers
- B The amount of time the sanitizer is left on the hands
- C The amount of hand sanitizer used
- D The time of day the experiment is conducted

- 36 **Jeremiah is measuring the growth of two indoor plants. He wants to find out if there is a difference in plant growth based on the amount of sunlight that each plant receives. All of the following are variables in this experiment EXCEPT —**
- F sunlight
  - G growth
  - H plants
  - J color of pot
- 37 **Glenda is designing an experiment for her science fair project on the amount of water that will grow the tallest plant. She wants to find out which amount of water will grow the tallest plant- 100 mL, 200 mL, or 300 mL per week. What is the independent variable in this experiment?**
- A Amount of water
  - B Color of the pot
  - C Type of plant
  - D Plant height

38

**Growth of Bacteria Over Time**



**A student conducted an investigation on the growth of bacteria over time. He incubated three different types of bacteria for 120 minutes. He began counting the number of bacteria grown after 30 minutes. What is the independent variable in this experiment?**

- F Type of bacteria
- G Trial number
- H Incubation time
- J Number of bacteria

- 39 **A factor that is controlled or selected within an experiment is called a —**
- A hypothesis.
  - B theory.
  - C control.
  - D variable.

40

Hypothesis: The addition of a fertilizer to soil will increase plant growth.

**Which of these experimental designs would best test this hypothesis?**



Fertilizer  
Water

No Fertilizer  
No Water



Fertilizer  
Water

No Fertilizer  
Water



Fertilizer  
Water

Fertilizer  
No Water



No Fertilizer  
No Water

No Fertilizer  
Water