



Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

1 Which structure is best observed using a **compound light microscope**?

- A a cell
- B a virus
- C a DNA sequence
- D the inner surface of a mitochondrion



3 A solution of glucose and yeast was placed in a vacuum bottle as shown below. The **temperature** of the yeast-glucose solution increased over time, and the **color of the indicator** was recorded.

The **purpose of the investigation** was most likely to demonstrate

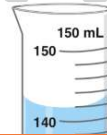
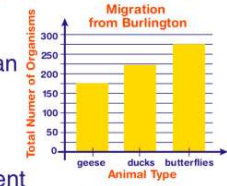
- A the relationship between temperature and pressure



4 A marble was placed in a graduated cylinder containing **100 milliliters** of water. The diagram below illustrates the new level of water.

What is the **volume of the marble**?

- A 41 mL
- B 42 mL

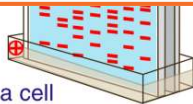


## PREVIEW

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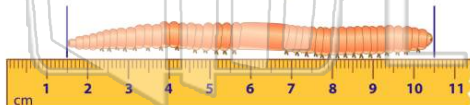
7

- B determine the pH of a cell
- C determine the charge of a cell
- D determine the size of a cell



- A Water diffused into the membrane bag.
- B The dialysis membrane actively transported yellow dye molecules.
- C Only red dye diffused through the membrane.
- D The yellow dye molecules are smaller than the red dye molecules.

9 What is the **approximate length** of the earthworm shown in the diagram below?

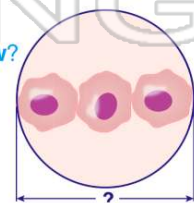


- A 9 mm
- B 90 mm
- C 10.6 mm
- D 106 mm

10 The diagram below shows three cells in the field of view of a microscope. The approximate diameter of each cell is **250 μm**.

What is the **approximate diameter of the field of view**?

- A 50 μm
- B 750 μm
- C 500 μm
- D 4,500 μm





## ANSWER KEY

Which structure is best observed using a **compound light microscope**?

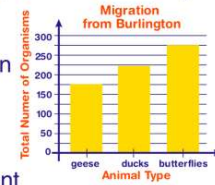
- A** a cell
- B** a virus
- C** a DNA sequence
- D** the inner surface of a mitochondrion



(a)

**Diagrams, tables, and graphs** are used by scientists mainly to

- A** design a research plan for an experiment
- B** test a hypothesis
- C** organize data
- D** predict the independent variable



(c)

A solution of glucose and yeast was placed in a vacuum bottle as shown below. The **temperature** of the yeast-glucose solution increased over time, and the **color of the indicator** was recorded.

The **purpose of the investigation** was most likely to demonstrate

- A** the relationship between temperature and pressure
- B** the release of energy by a chemical process
- C** the production of proteins by yeast
- D** the production of carbon dioxide by yeast

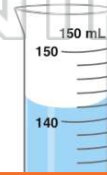


(b)

A marble was placed in a graduated cylinder containing **100 milliliters** of water. The diagram below illustrates the new level of water.

What is the **volume of the marble**?

- A** 41 mL
- B** 42 mL
- C** 141 mL



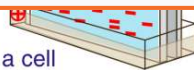
(b)



## PREVIEW

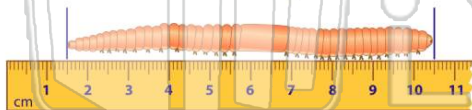
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- A** determine the shape of a cell
- B** determine the volume of a cell
- C** determine the charge of a cell
- D** determine the size of a cell



- A** The dialysis membrane actively transported yellow dye molecules.
- B** The dialysis membrane actively transported red dye molecules.
- C** Only red dye diffused through the membrane.
- D** The yellow dye molecules are smaller than the red dye molecules.

What is the **approximate length** of the earthworm shown in the diagram below?



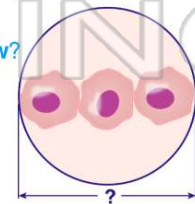
- A** 9 mm
- B** 90 mm
- C** 10.6 cm
- D** 106 cm

(b)

The diagram below shows three cells in the field of view of a microscope. The approximate diameter of each cell is **250 μm**.

What is the **approximate diameter** of the field of view?

- A** 50 μm
- B** 750 μm
- C** 500 μm
- D** 4,500 μm



(b)