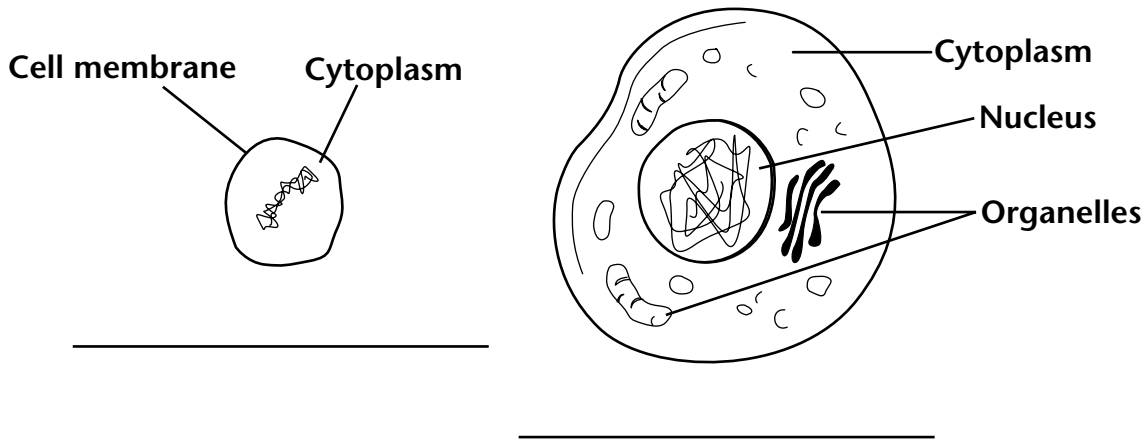


### Prokaryotic and Eukaryotic Cells

Look at the diagrams below. Label the prokaryotic cell and the eukaryotic cell.



Use the diagrams to answer the question.

1. Explain why you labeled each diagram as you did.

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Compare and contrast the two types of cells by completing the table.

	Prokaryotic Cell	Eukaryotic Cell
Cell membrane	present	
Nucleus		present
Cell size		large
Complexity	simple	

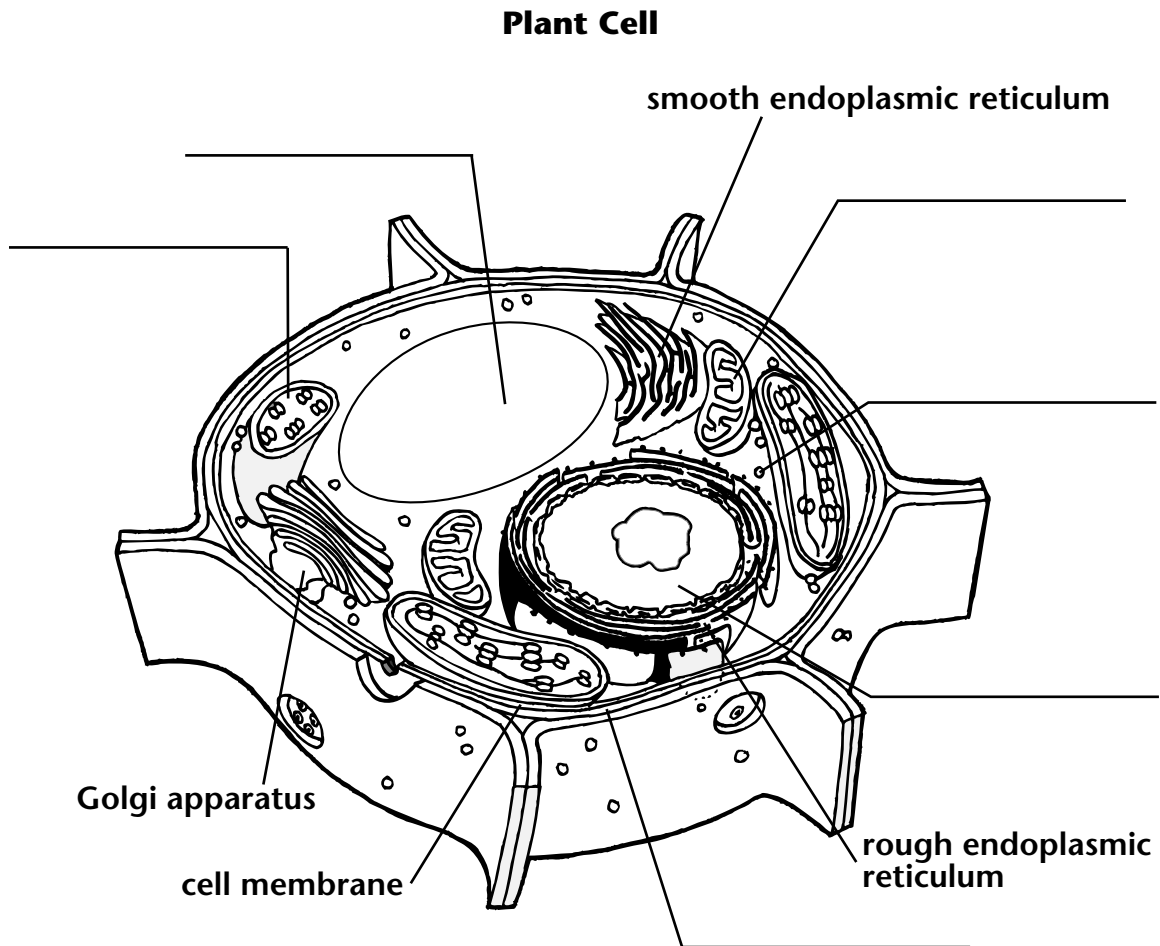
Answer the questions. Circle the correct answer.

2. What type of cells makes up your body?  
 prokaryotic    eukaryotic
3. What type of cell is a bacterial cell?  
 prokaryotic    eukaryotic

## Plant Cell

Use the words below to label the plant cell. Some structures have already been labeled for you.

cell wall	mitochondrion	ribosome
chloroplast	nucleus	vacuole



Use the diagram to answer the questions.

1. Which structure is found in a plant cell but not in an animal cell? Circle the correct answer.

chloroplast      cell membrane      ribosome

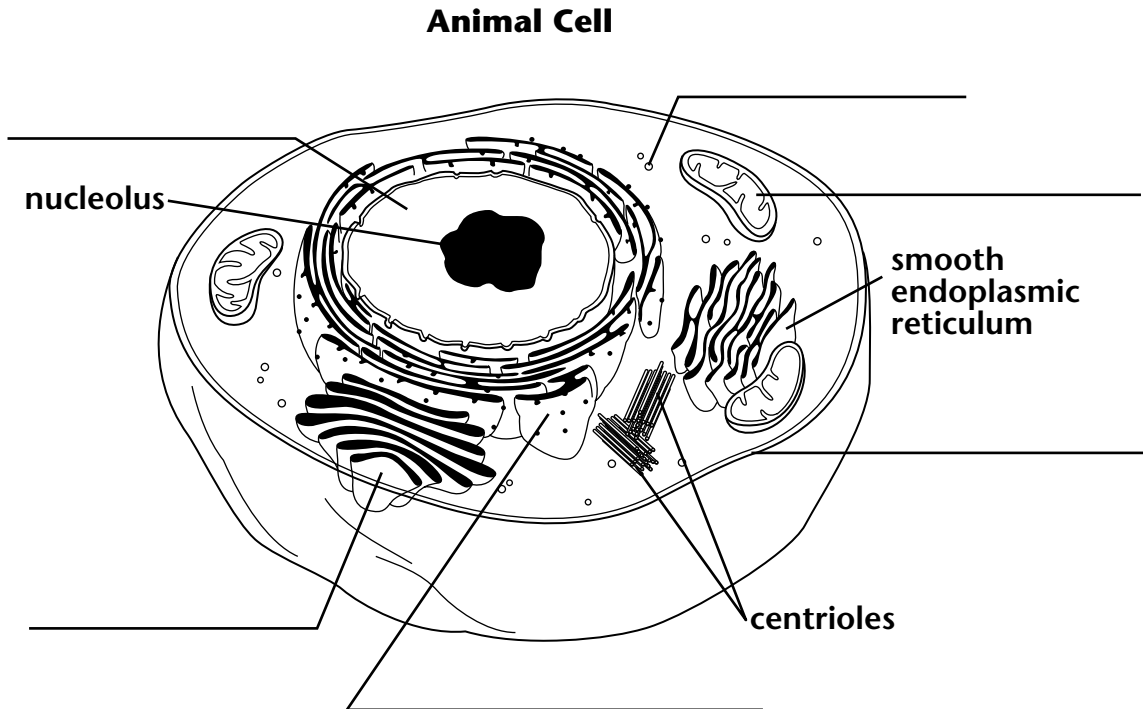
2. What is the main function of vacuoles?

\_\_\_\_\_

## Animal Cell

Use the words below to label the animal cell. Some structures have already been labeled for you.

cell membrane	mitochondrion	rough endoplasmic reticulum
Golgi apparatus	nucleus	ribosome



Use the diagram to answer the questions.

1. What is the area between the nucleus and the cell membrane called?

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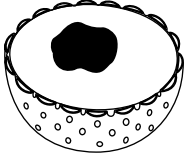
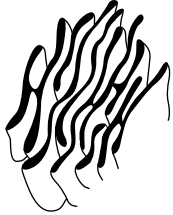
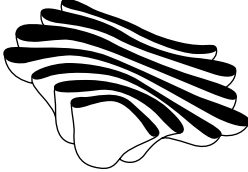

2. What cell structures are found on the surface of rough endoplasmic reticulum but not on smooth endoplasmic reticulum?

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### Organelle Function

An organelle is a specialized cell structure. Each organelle functions in a different way to help the cell carry out life processes.

A mitochondrion, nucleus, endoplasmic reticulum, and Golgi apparatus are pictured and described below. Write the name of the organelle underneath its picture.

Organelle	Function
	<p>controls most cell processes and stores genetic material</p>
	<p>makes membrane lipids that will be exported out of the cell</p>
	<p>modifies, sorts, and packages materials from the endoplasmic reticulum</p>
	<p>converts the energy stored in food into a more useable form</p>

Use the table to answer the question.

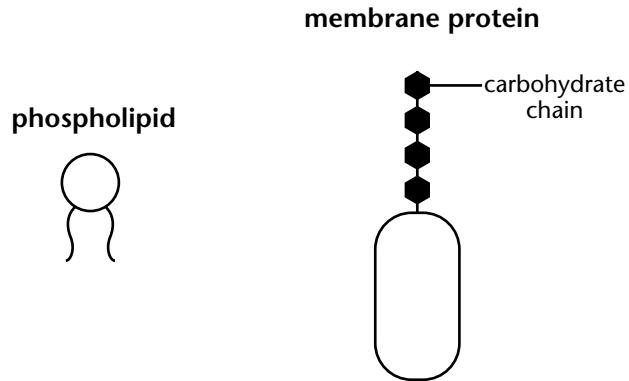
1. Which of the structures shown above contains a nucleolus?

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## Cell Membranes

The cell membrane controls what enters and leaves the cell. Most cell membranes are made up of a phospholipid bilayer. This bilayer usually contains membrane proteins embedded in it.

*Draw a diagram of a portion of a cell membrane. Label the cytoplasm and the area outside the cell. A sample phospholipid and membrane protein have been diagrammed for you.*



*Answer the question.*

1. What do the carbohydrate chains on some membrane proteins do?

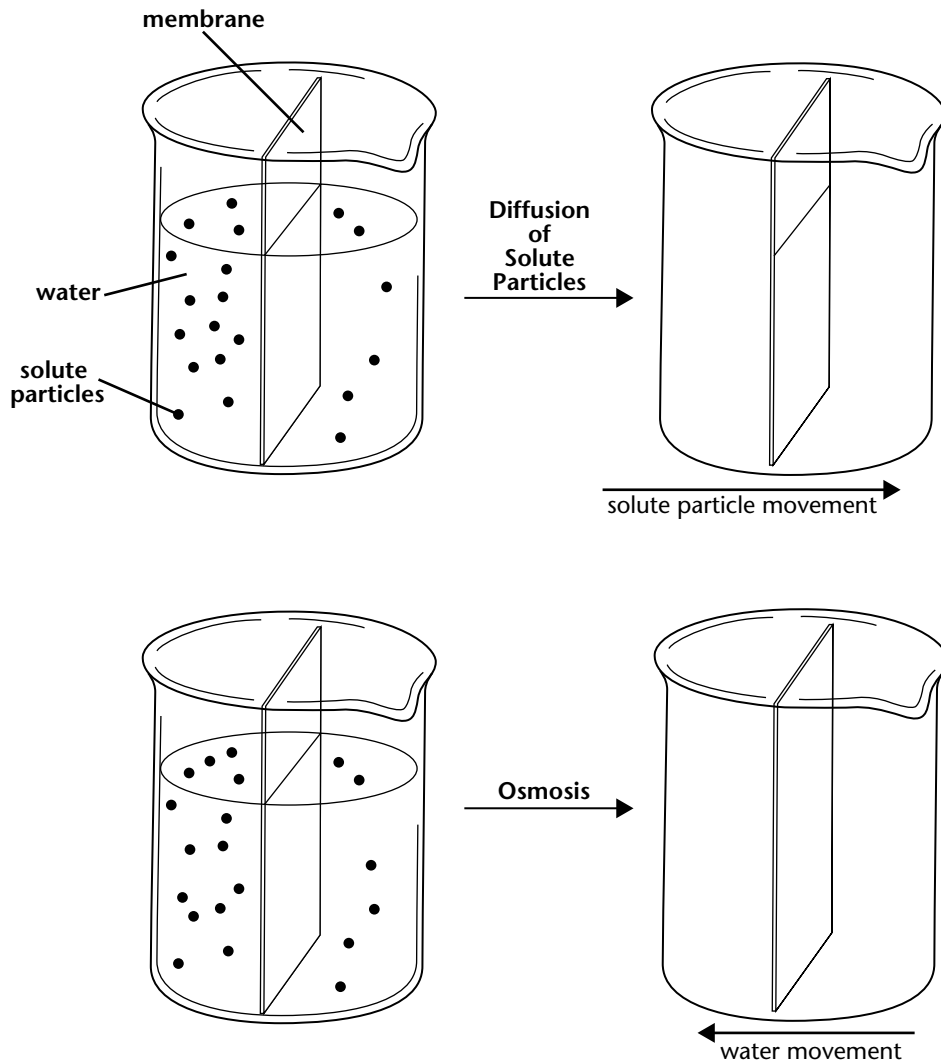
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### Diffusion and Osmosis

Diffusion is the movement of particles from an area of high concentration to an area of low concentration. Osmosis is the diffusion of water through a selectively permeable membrane.

Look at the beakers on the left. In the beakers on the right, draw in any changes in water level or number of solute particles on each side of the membrane that occur as a result of the described process.



Use the diagrams to answer the question.

1. Look at the top left beaker. What would happen if the membrane did not allow water or solute particles to pass through it?

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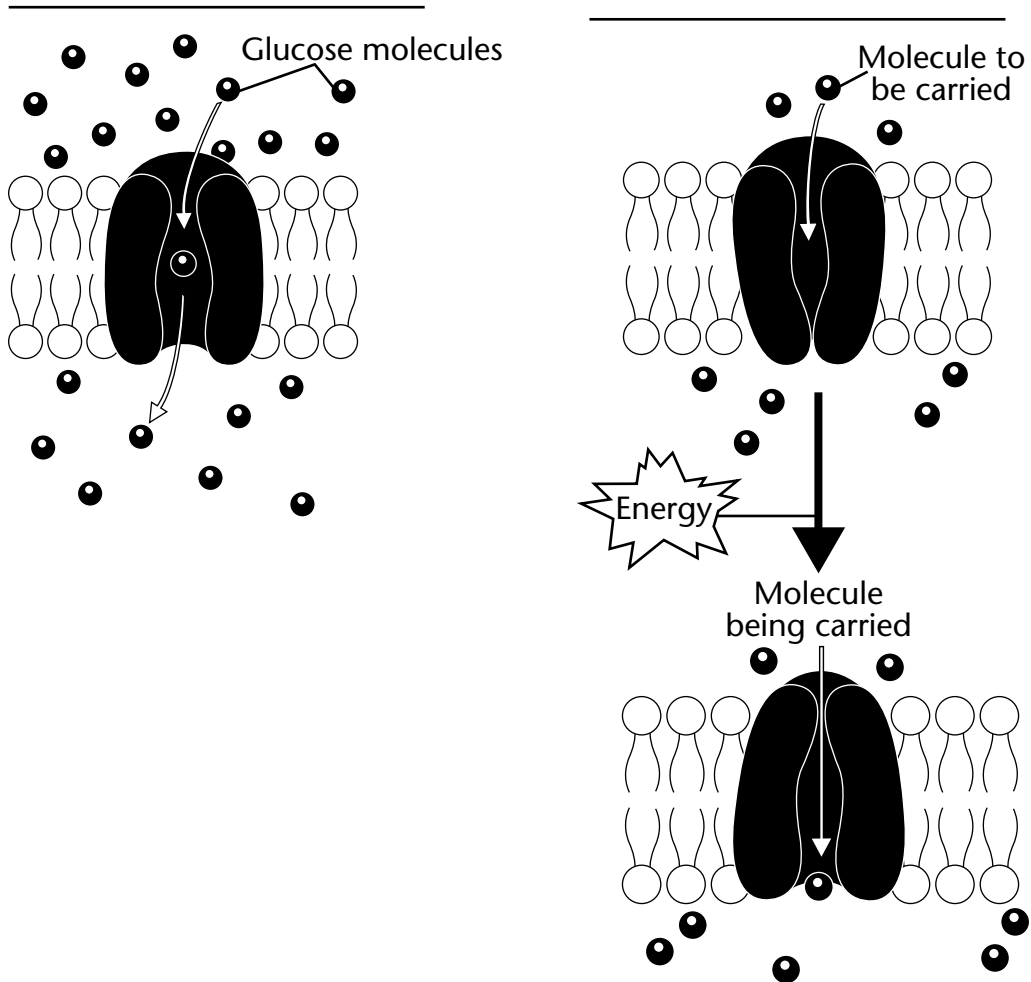


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## Facilitated Diffusion and Active Transport

Facilitated diffusion occurs when a substance diffuses across the cell membrane through a protein channel. Active transport occurs when the cell uses energy to carry a substance across the cell membrane.

Look at the diagrams. Label each as either facilitated diffusion or active transport.



Use the diagram to answer the questions.

1. Which process can move molecules from a lower concentration solution on one side of the membrane to a higher concentration solution on the other side?

\_\_\_\_\_

2. Which process does not require energy?

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