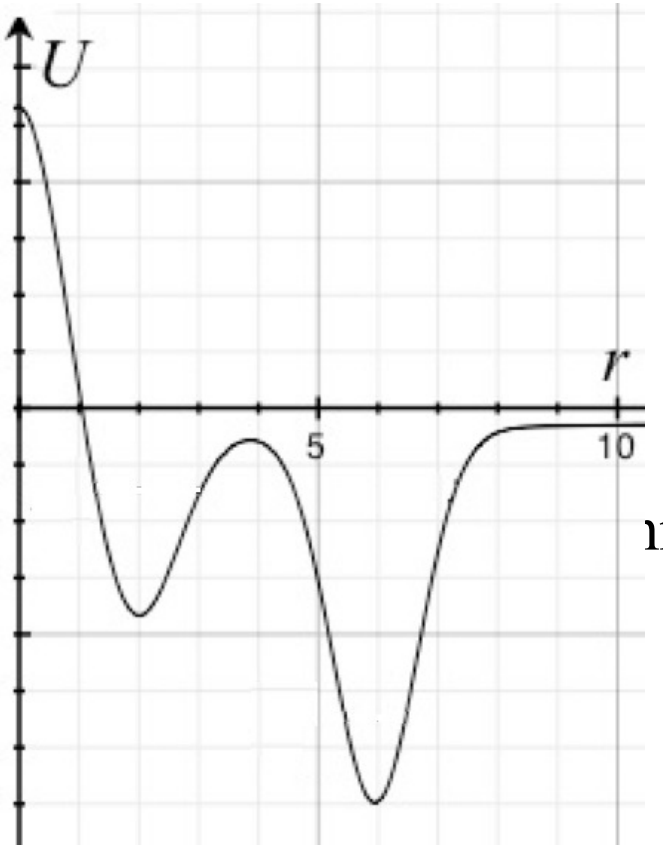
The figure below shows the interaction potential between two molecules (along a particular orientation of the two molecules). The units are in nm (r) and eV (*U*).

When the molecules are separated by 7 nm the force between them is

1. Attractive
2. Repulsive
3. Zero
4. Cannot be determined from the figure.

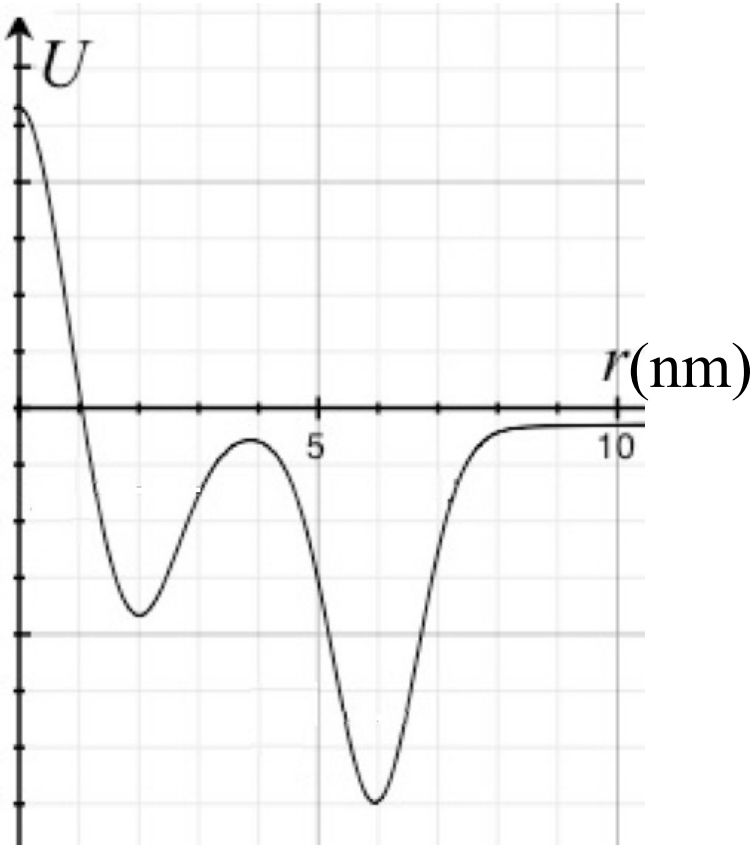


ım)

The figure below shows the interaction potential between two molecules (along a particular orientation of the two molecules). The units are in nm (r) and eV (*U*).

When the molecules are separated by 2 nm the force between them is

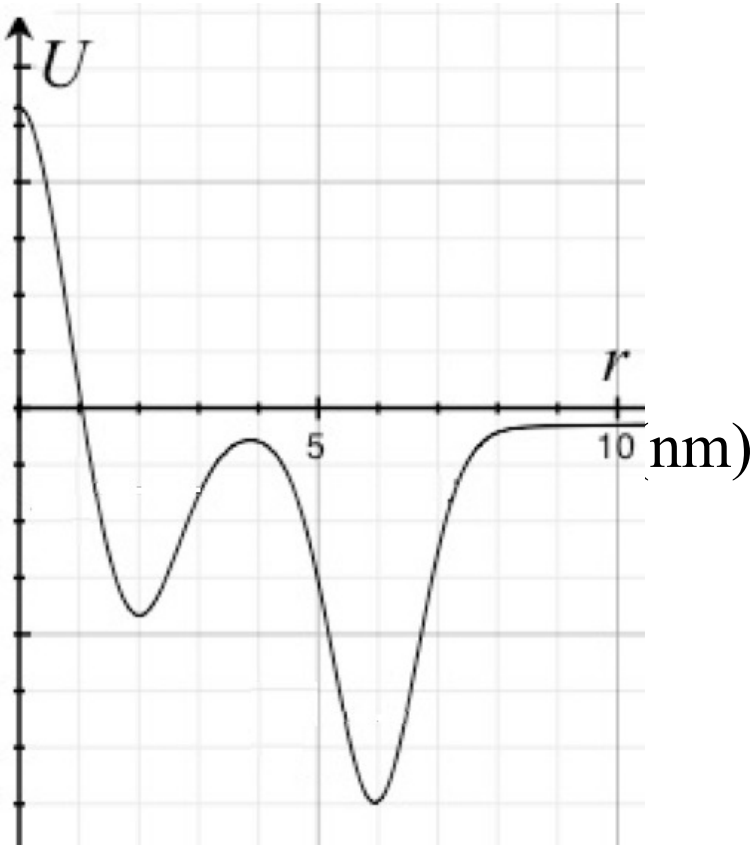
1. Attractive
2. Repulsive
3. Zero
4. Cannot be determined from the figure.



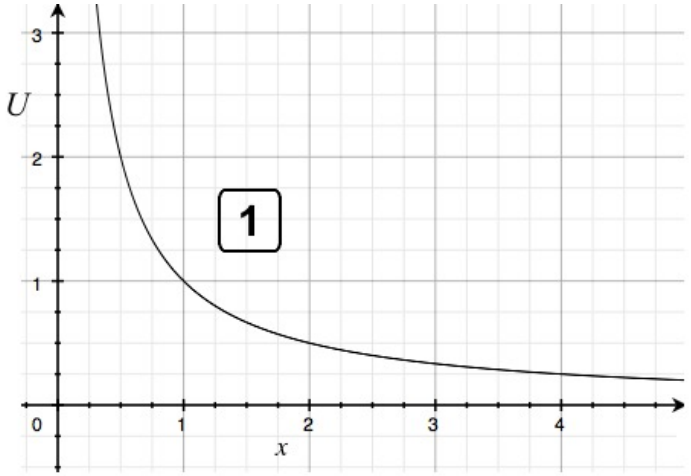
The figure below shows the interaction potential between two molecules (along a particular orientation of the two molecules). The units are in nm (r) and eV (*U*).

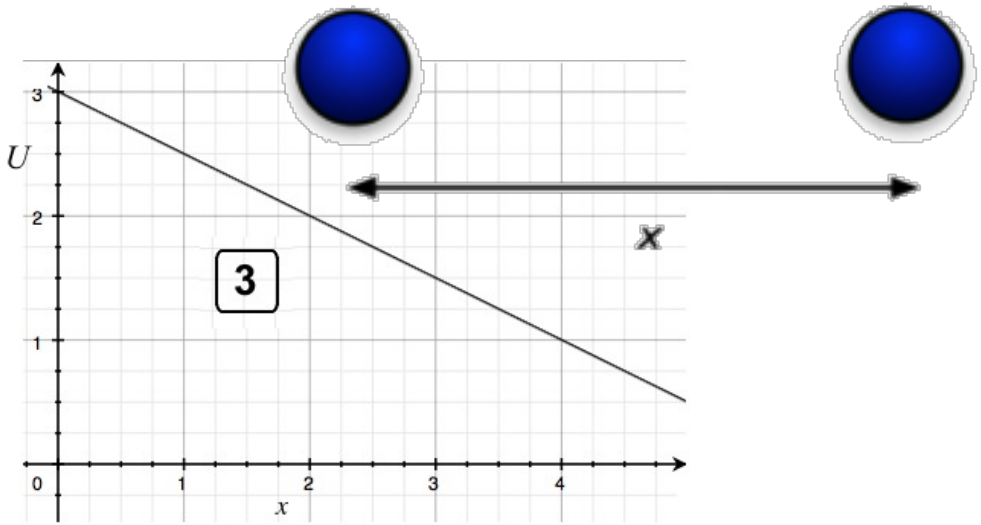
When the molecules are separated by 0.5 nm the force between them is

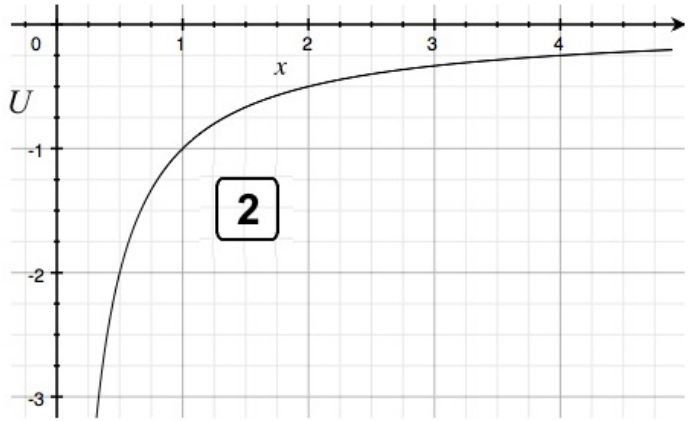
1. Attractive
2. Repulsive
3. Zero
4. Cannot be determined from the figure.

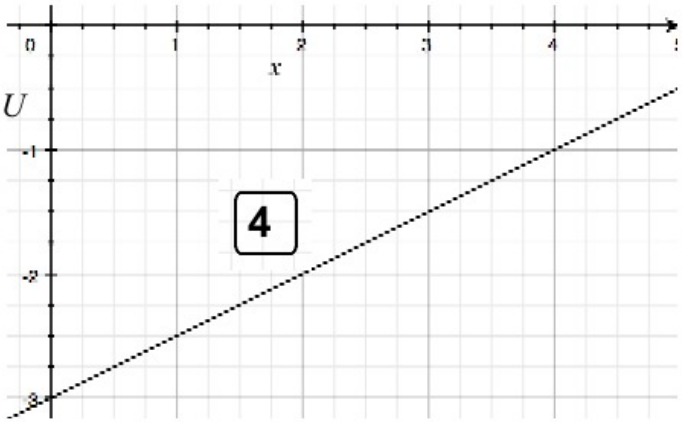


What does the electric potential energy between two identical charges look like?



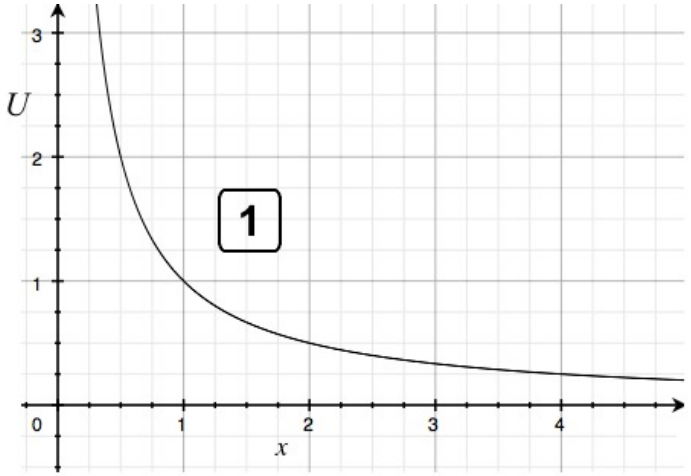


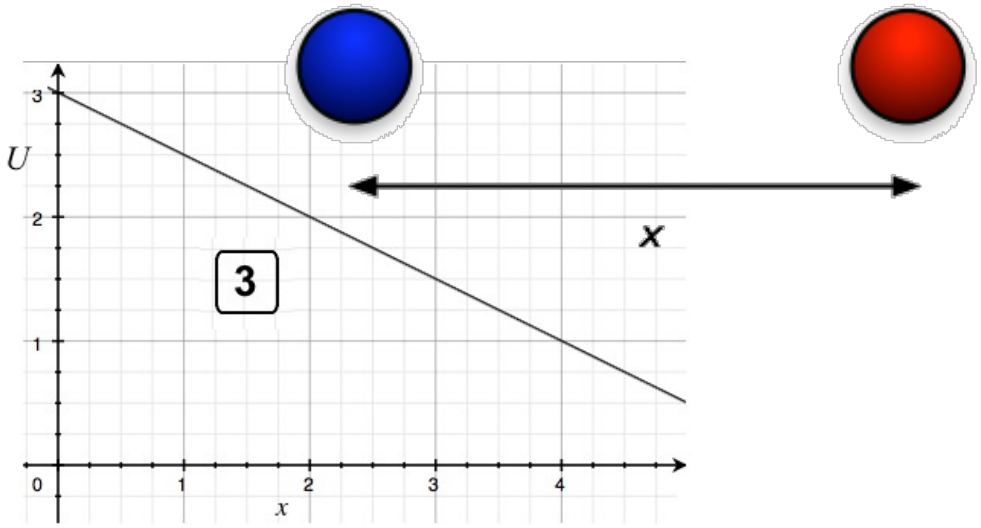


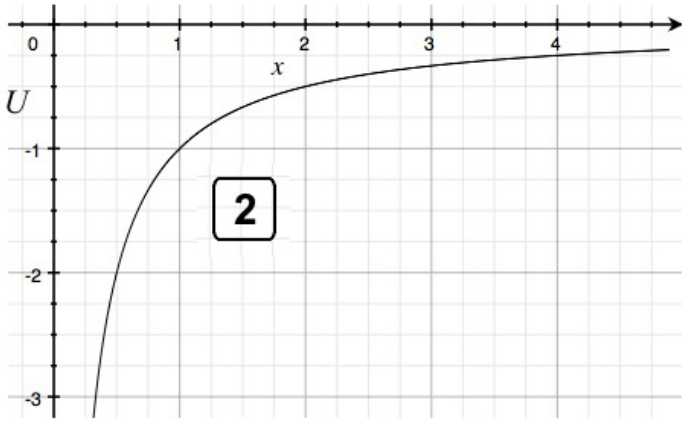


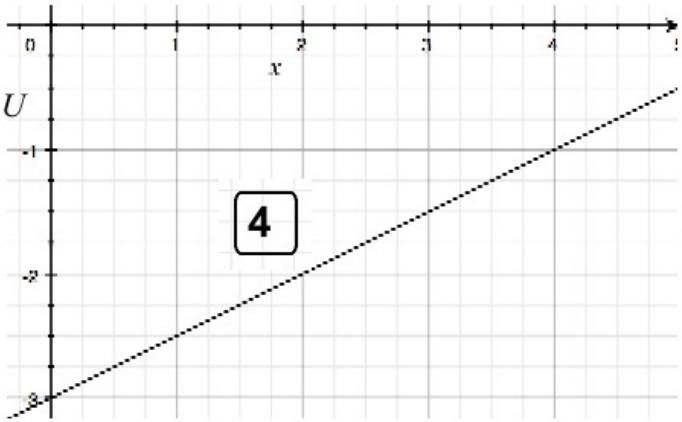
5. None of the above

What does the electric potential energy between two opposite charges look like?









5. None of the above

When a positive (test) charge is released from rest near a fixed positive (source) charge (held fixed) what happens to the electric potential energy of the test charge?

1. It will increase because the test charge will move towards the source charge.
2. It will decrease because the test charge will move away from the source charge.
3. It will increase because the test charge will move away from the source charge.
4. It will decrease because the test charge will move towards the source charge.
5. It will remain constant because the test charge remains at rest.
6. There is not enough information to tell.

When a negative (test) charge is released from rest near a fixed positive (source) charge (held fixed) what happens to the electric potential energy of the test charge?

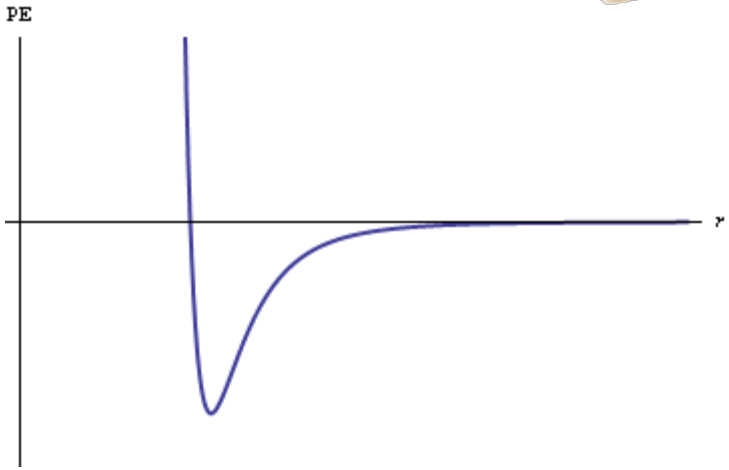
1. It will increase because the test charge will move towards the source charge.
2. It will decrease because the test charge will move away from the source charge.
3. It will increase because the test charge will move away from the source charge.
4. It will decrease because the test charge will move towards the source charge.
5. It will remain constant because the test charge remains at rest.
6. There is not enough information to tell.

How do the **velocity** and **force** at points A,B,C compare? Consider both magnitude and direction!

Draw the vectors on the whiteboard

You know that two atoms that are far apart are barely interacting.

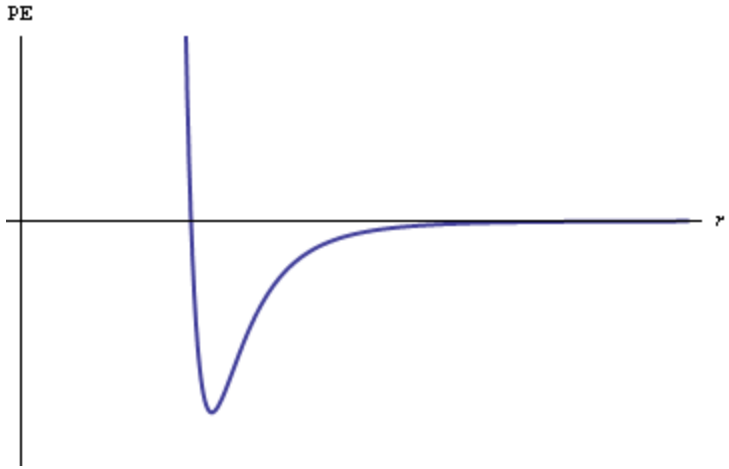
How is this represented visually in the PE diagram?



1. The potential energy approaches zero as *r* gets large.
2. The PE curve is close to horizontal as *r* gets large.
3. The PE curve is close to vertical as *r* gets small.
4. The potential energy has a minimum.
5. More than one of these
6. The PE diagram doesn't demonstrate this information
7. None of these

These two atoms can exist in a stable bound state.

How is this represented visually in the PE diagram?



1. The potential energy approaches zero as *r* gets large.
2. The PE curve is close to horizontal as *r* gets large.
3. The PE curve is close to vertical as *r* gets small.
4. The potential energy has a minimum.
5. More than one of these
6. The PE diagram doesn't demonstrate this information
7. None of these