

## *Reading Potential Energy Curves*

The graph represents the potential energy of a two-particle system based on the particle separation.

1-1. Mark the positions where the force between the particles equals zero.

2-1. Identify the range(s) of values where the force is positive.

3-1. Identify the range(s) of values where the force is negative.

4-2. Sketch the force on the graph at the right.

5-2. Identify the range(s) of values where the force is attractive.

6-2. Identify the range(s) of values where the force is repulsive.

7-3. If the total energy is  $E_1$ , identify the allowable separations.

8-3. If the total energy is  $E_2$ , identify the allowable separations.

9-3. If the total energy is  $E_3$ , identify the allowable separations.

10-4. Sketch the kinetic energy function for the situation if the total energy is  $E_1$ .

11-4. Sketch the kinetic energy function for the situation if the total energy is  $E_2$ .

12-4. Sketch the kinetic energy function for the situation if the total energy is  $E_3$ .

13-3. Identify turning points and points of equilibrium for each total energy given.

