

## Spherical symmetry and potential energy functions

$$-\Delta U_{F,1\dots N} := \Delta W_{F,2 \text{ ON } 1} + \Delta W_{F,1 \text{ ON } 2} + \dots + \Delta W_{F,N-1 \text{ ON } N}$$

- Pair of objects: One particle is fixed “at center” and the other particle is considered the moveable “test” particle
- Spherical symmetry: **Force** on test particle is **radial**, with **magnitude** that is the **same at** all locations with **same radius**
- **Same work** both along path I and along path II
- Possible to assign **potential energy** values to points (a), (b), and everywhere else that the test particle can be placed

