CONCEPTUAL PROBLEMS, Chapter 25
Phys 2401, Dr. Huang

Fill in a T/F answer for each statement below:

1. [ ] The electrostatic potential difference between point A and B, \( \Delta V_{AB} \), can be calculated using a path integral, and \( \Delta V_{AB} \) does not depend on the integral path used.

2. [ ] A common reference point for electrostatic potential is \( V = 0 \) at \( \infty \).

3. [ ] The magnitude of work required to bring a charge \( q \) from point A to point B is \( |qV_{BA}| \).

4. [ ] eV is a unit for potential.

5. [ ] When a charged particle is accelerated from rest in an electric field, the amount of kinetic energy increased equals the amount of potential energy decreased, i.e., \( \frac{1}{2} mv^2 = |q\Delta V| \)

6. [ ] An electric field line points to the direction of higher electric potential.

7. [ ] An equipotential surface is always parallel to electric field lines.

8. [ ] The electrostatic potential generated by multiple charges, is the vector addition of the potentials generated by individual charges.

9. [ ] Inside a conductor, the electric field and potential are both zero.

10. [ ] The electric fields created by a point charge, a conducting sphere, and an insulator sphere are identical, if they all have the same amount of charge and the field is measured outside the spheres.