Tecnológico de Monterrey

Materia, clave-grupo: Electricidad y Magnetismo, F1005-502 (Nacional)

Período I. Parcial 1

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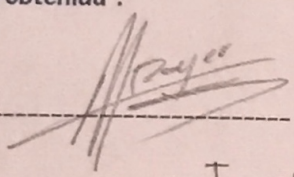
"Apegándome al Código de Ética de los Estudiantes del Tecnológico de Monterrey, me comprometo a que mi actuación en este examen esté regida por la honestidad académica. En congruencia con el compromiso adquirido con dicho código, realizaré este examen de forma honesta y personal, para reflejar, a través de él, mi conocimiento y aceptar, posteriormente, la evaluación obtenida".

FIRMA_____



I choose the second problem.

(b) In a certain region of space, electric field is zero. From this fact, what can you conclude about the electric potential in this region?

My answer is (b) it does not vary with position

Because:

Given that, the electric function of posdion in terms of potential is

$$E = -\frac{dv}{dr}$$

Electric field in certain space is zero is equal: $E = 0$

that means substitute 0 in E

$$0 = -\frac{dv}{dr} \qquad 0 = \frac{dv}{dr}$$

This means V is constant and the electric potential is constant at everywhere in the region and doesn't vary position