

From Griffiths, READ sections 1.3 & 1.4.

Re-read section 1.2.4 and do Griffiths problem 1.15

AQ1: Try your hand at using the gradient in cylindrical coordinates (see Eqn. 1.79 or inside front cover of text):

A) $t(s, \varphi, z) = 6s^2 z^4$

B) $t(s, \varphi, z) = s^3 \cos \varphi + s^2 z$

AQ2: Suppose the electric potential is given by $V(x, y, z) = 6x^2 y^3 z^4 + \ln(xy)$.

A) Find an expression for the corresponding electric field.

B) What is the value of the electric potential at the point $(x, y, z) = (3, 2, -1)$? What is the electric field at that point? What is the magnitude of the electric field at that point?

