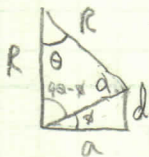
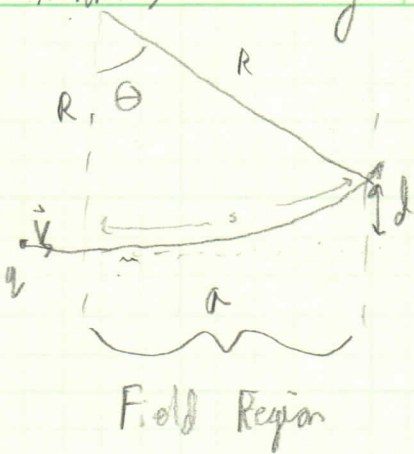


Kinkle, Zachary

EM Griffiths

07/23/18

5.1



$$\alpha = 90 - \phi$$

$$180 = 180 - 2\phi + \theta \Rightarrow \theta = (2\phi)$$

$$\frac{R}{\sin \alpha} = \frac{\sqrt{a^2 + d^2}}{\sin \theta}$$

$$R = \frac{\sin(90 - \phi)}{\sin(2\phi)} \sqrt{a^2 + d^2}$$

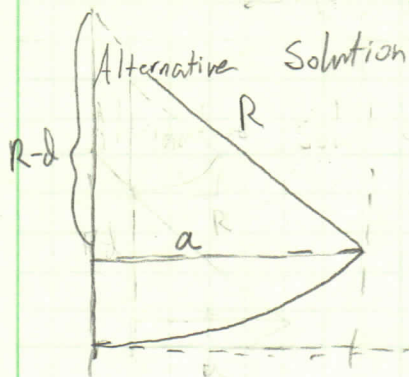
$$R = \frac{\cos(\phi)}{2\sin\phi \cos\phi} \sqrt{a^2 + d^2}$$

$$R = \frac{\sqrt{a^2 + d^2}}{2\sin\phi}$$

$$\sin\phi = \frac{d}{\sqrt{a^2 + d^2}}$$

$$R = \frac{a^2 + d^2}{2d}$$

$$p = qBR = \frac{qB}{2d} (a^2 + d^2)$$



$$(R-d)^2 + a^2 = R^2 \Rightarrow R^2 - 2Rd + d^2 + a^2 = R^2 \Rightarrow \frac{d^2 + a^2}{2} = R$$