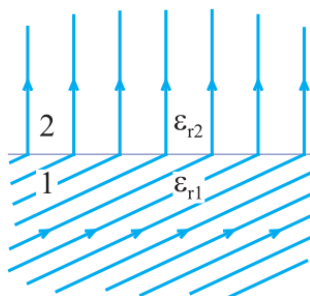


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*Refraction of electrostatic field lines.* Fig. Q2.4 shows lines of an electrostatic field near a dielectric-dielectric boundary that is free of charge ( $\rho_x = 0$ ). Which of the following is a possible combination of the two media?

- (A) Medium 1 is PVC ( $\epsilon_{r1} = 2.7$ ) and medium 2 is mica ( $\epsilon_{r2} = 5.4$ ).
- (B) Medium 1 is mica ( $\epsilon_{r2} = 5.4$ ) and medium 2 is PVC ( $\epsilon_{r1} = 2.7$ ).
- (C) Medium 1 is water ( $\epsilon_{r1} = 81$ ) and medium 2 is air ( $\epsilon_{r2} = 1$ ).
- (D) Medium 1 is air ( $\epsilon_{r1} = 1$ ) and medium 2 is water ( $\epsilon_{r2} = 81$ ).
- (E) Both combinations (A) and (B) above.
- (F) Both combinations (C) and (D) above.



**Figure Q2.4** Refraction of electric field lines at an interface between two dielectric media; for Question 2.8.

*Solution:* (C)

*Answer:* (C)