

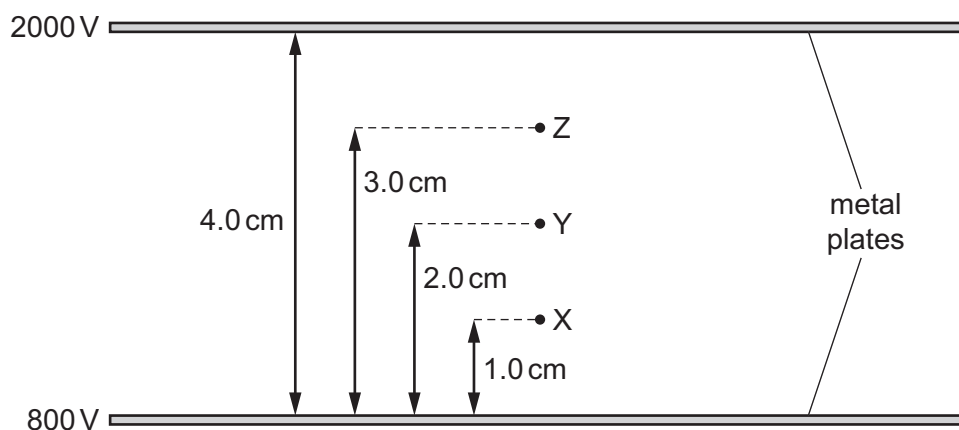
30 Before a thunderstorm, the hairs on your head sometimes stand on end.

A hair with mass 0.50 mg and charge 1.0 pC is supported by a force due to an electric field. Ignore any forces other than the weight of the hair and the electric force.

What is the electric field strength?

- A** $4.9 \times 10^3 \text{ NC}^{-1}$
- B** $4.9 \times 10^5 \text{ NC}^{-1}$
- C** $4.9 \times 10^6 \text{ NC}^{-1}$
- D** $4.9 \times 10^9 \text{ NC}^{-1}$

31 Two parallel metal plates, 4.0 cm apart, are at electric potentials of 800 V and 2000 V . Points X, Y and Z are situated in the space between the plates at distances of 1.0 cm , 2.0 cm and 3.0 cm from the lower plate.



What is the electric field strength, in V m^{-1} , at X, Y and Z?

	X	Y	Z
A	300	600	900
B	1100	1400	1700
C	3.0×10^4	3.0×10^4	3.0×10^4
D	5.0×10^4	5.0×10^4	5.0×10^4