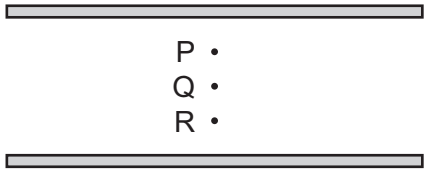
30 The diagram shows two parallel plates.

The plates are charged so that there is an electric field between them. P, Q and R are points which are $\frac{1}{4}$, $\frac{1}{2}$ and $\frac{3}{4}$ of the distance from the top plate to the bottom plate.



What is the electric field strength at point P?

A the same as that at point Q

B twice that at point R

C half that at point R

D one third that at point Q

31 A positive charge of 2.6×10^{-8} C is in an electric field of constant field strength 300 000 V m^{-1}.

How much work must be done on the charge in order to move it a distance of 4.0 mm in the opposite direction to the direction of the field?

A 3.1×10^{-5} J

B 2.0×10^{-3} J

C 3.1×10^{-2} J

D 2.0 J

Space for working