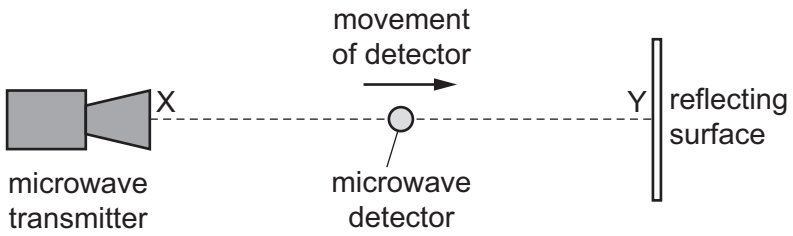
29 A microwave transmitter is placed at a fixed distance from a flat reflecting surface, as shown.



A microwave detector is moved steadily in a straight line from X to Y. A series of maxima and minima of intensity is obtained. The distance between adjacent maxima is 1.5 cm.

What is the frequency of the microwave radiation?

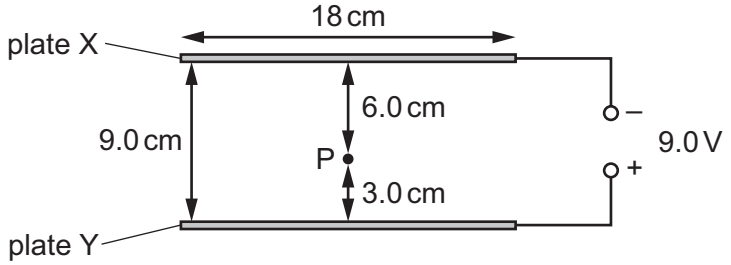
A 1.0×10^8 Hz

B 2.0×10^8 Hz

C 1.0×10^{10} Hz

D 2.0×10^{10} Hz

30 Two parallel circular metal plates X and Y, each of diameter 18 cm, have a separation of 9.0 cm. A potential difference of 9.0 V is applied between them.



Point P is 6.0 cm from the surface of plate X and 3.0 cm from the surface of plate Y.

What is the electric field strength at P?

A $50\,\text{N C}^{-1}$ **B** $100\,\text{N C}^{-1}$ **C** $150\,\text{N C}^{-1}$ **D** $300\,\text{N C}^{-1}$