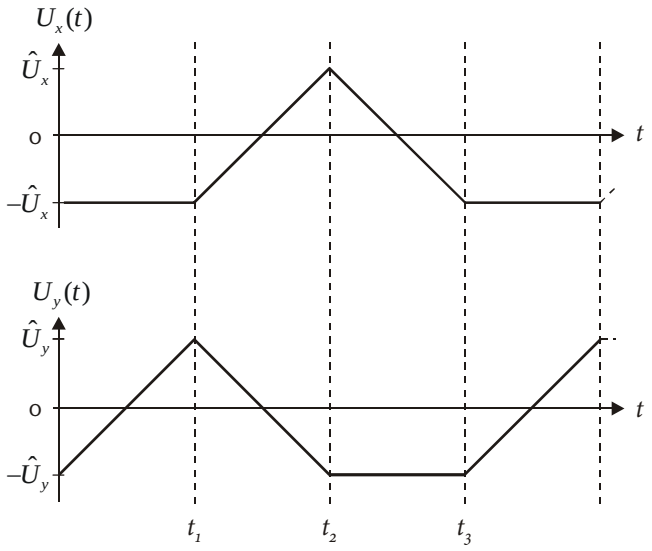
Deflection Voltage

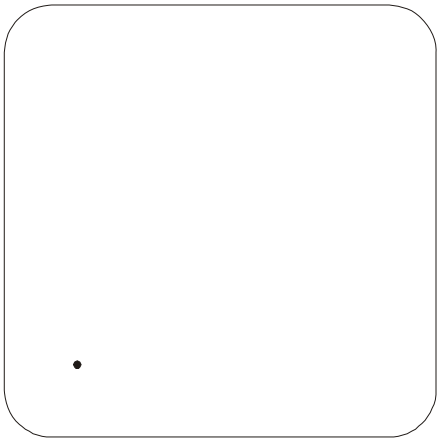
Two sets of parallel plates are used to deflect the electron beam in a cathode ray oscilloscope (CRO). Applying a deflection voltage to the horizontal plates (x-plates) makes the spot on the screen move horizontally, a voltage between the vertical plates (y-plates) makes it move vertically.

Exercise 1

The diagrams below give the variation of the horizontal and vertical deflection voltage in time. At t = 0, the spot on the screen is at the position marked with a black point.

Draw the trace the spot describes on the fluorescent screen.





Exercise 2

The electron beam follows a square path on the screen. Draw the corresponding variation of the deflection voltages $U_x(t)$ and $U_y(t)$.