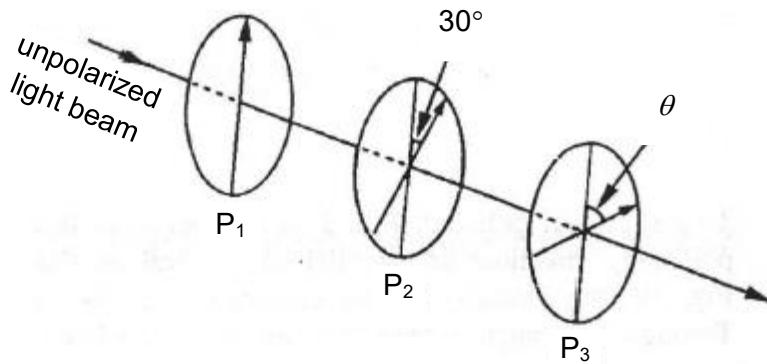


- 14** The figure below shows a beam of initially unpolarised light passing through 3 polarisers  $P_1$ ,  $P_2$  and  $P_3$ . The polarising axis of each polaroid is shown by an arrow. Polaroids  $P_1$  and  $P_2$  are fixed, with their polarising axes at  $30^\circ$  to each other, and  $P_3$  can be set with its polarising axis at a variable angle  $\theta$  to that of  $P_1$ .



The polarised light beam incident on  $P_2$  has an intensity of  $30 \text{ W m}^{-2}$  while the light beam emerging from  $P_3$  has an intensity of  $14 \text{ W m}^{-2}$ .

What is a possible value of  $\theta$  for the light emerging from  $P_3$ ?

**A**  $38^\circ$

**B**  $52^\circ$

**C**  $57^\circ$

**D**  $68^\circ$