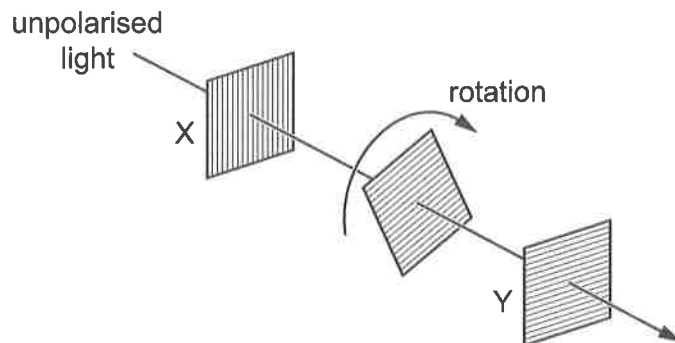17 Two perfectly polarising filters, X and Y, are arranged in parallel and in line, with their planes of polarisation at 90°. A third filter is placed in parallel between them such that its plane of polarisation is at 45° to the other planes. Unpolarised light is directed at filter X. The middle filter is rotated through 90° in the vertical plane, keeping it parallel to the other filters.

How does the intensity of the light emerging from filter Y vary with the angle of the middle filter?