

8 A converging lens can be used to produce a real image on a screen.

- (a) A converging lens of focal length 15.0 cm is used to project an image of an illuminated object onto a screen. The object is a circle of diameter 4.0 mm and the image must be as large as possible on a screen of size 0.75 m by 1.25 m.

Calculate the distance between the lens and the screen for this image to be displayed.

(3)

Distance between lens and screen =

- (b) A magazine article includes the statement:

If the distance from the lens to the screen is doubled, the brightness of the image is halved.

Assess the validity of this statement.

(2)

(Total for Question 8 = 5 marks)