Q- Light of wavelengths 480nm and 620nm is incident on a double slit of slit width 0.54mm. How far apart are the second-order fringes for these two wavelengths on a screen 1.6m away?

The fringe width is given by

$$\beta = \frac{D\lambda}{d}$$

Hence $\beta_1 = \frac{D\lambda_1}{d} = \frac{1.6*480*10^{-9}}{0.54*10^{-3}} = 1.42*10^{-3}$

And $\beta_2 = \frac{D\lambda_1}{d} = \frac{1.6*620*10^{-9}}{0.54*10^{-3}} = 1.84*10^{-3}$

Hence the difference in the second order maxima will be

$2(\beta_2 - \beta_1) = 2*0.42*10^{-3}$ m = 0.84 mm.