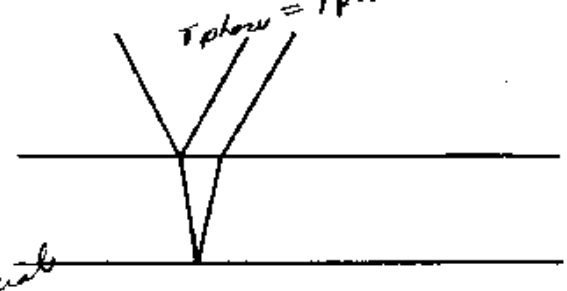

Avg. = 13,4

11 pts for general form
7 more for equations

$2nd = m\lambda$

5 points for approx form.

wrong

$\frac{3.2d}{3.2d} = \frac{m\ 611nm}{(m+1)\ 550}$

$2nd = (m+\frac{1}{2})\ 611$

$2Nd = (m+\frac{3}{2})\ 550$

$1 + \frac{1}{m} = 611/550$

$\frac{m-\frac{3}{2}}{m+\frac{1}{2}} = \frac{611}{550}$

$m = 9, 10, 11, 12,$

3 pts if tried to get m values
(2 more if right m's.

$m - m\,611/550 = \frac{1}{2}(611/550) - 3/2$

$m = 8.51$!

$d = (9)611/3. = 1.718\ \mu m$

1 pt for #.

$d = 13\,(423)/3. = 1.718\ \mu m$ check

mica	13 4
5 dec	8.87

no points for Snells Law or double slit approach.

3. **It is desired to measure the thickness of a thin flake of mica (n = 1.60). White light is incident perpendicular to the surface. Complete destructive interference in reflection is obseved for the following wavelengths. Find the thickness of the mica.** ∑ Note: Round-off errors can be confusing in this problem.

λ_1 = 611 nm (red-orange)

λ_2 = 550 nm (yellow)

λ_3 = 500 nm (green)

λ_4 = 459 nm (blue)

λ_5 = 423 nm (violet)

this data wrong 459 423