ex 8.1

(11) $\frac{\sin^2 22^\circ + \sin^2 68^\circ}{\cos^2 22^\circ + \cos^2 68^\circ} + \sin^2 63^\circ + \cos 63^\circ \sin 27^\circ$

$= \frac{\cos^2(90^\circ - 22) + \cos^2(90^\circ - 68)}{\cos^2 22^\circ + \cos^2 68^\circ} + \sin^2 63^\circ + \cos 63^\circ \cos(90^\circ - 27^\circ)$

$= \frac{\cancel{(\cos^2 68^\circ + \cos^2 22^\circ)}}{\cancel{(\cos^2 22^\circ + \cos^2 68^\circ)}} + \sin^2 63^\circ + \cos 63^\circ \cos 63^\circ$

$= 1 + \sin^2 63^\circ + \cos^2 63^\circ$

$= 1 + 1$

$= 2$ (B)

NCERT Exemplar Solutions by Dev Anoop (Bathinda)

(12) $4 \tan\theta = 3$

$\Rightarrow \tan\theta = \frac{3}{4}$

$\frac{4\sin\theta - \cos\theta}{4\sin\theta + \cos\theta}$

div. n and d by $\cos\theta$

$= \frac{4\frac{\sin\theta}{\cos\theta} - \frac{\cancel{\cos\theta}^{1}}{\cancel{\cos\theta}}}{4\frac{\sin\theta}{\cos\theta} + \frac{\cancel{\cos\theta}^{1}}{\cancel{\cos\theta}}}$

$= \frac{4\tan\theta - 1}{4\tan\theta + 1}$

$= \frac{\cancel{4} \times \frac{3}{\cancel{4}} - 1}{\cancel{4} \times \frac{3}{\cancel{4}} + 1}$

$= \frac{\cancel{2}^{1}}{\cancel{4}_{2}}$ (C)