

## OPTI 500F, HOMEWORK #4

Due May 2<sup>nd</sup>, 2012

Optical solitons have a pulse shape given by given by

$$I = I_0 \operatorname{sech}^2(t/\tau)$$

where the requirement for self-phase modulation to balance GVD is

$$I_0 = \frac{\lambda_0^3 |D|}{1.288 \pi^2 c \tau^2 n_2}.$$

Find the peak intensity for a 10-psec-long optical soliton in optical fiber at a wavelength of 1550 nm.