

## HW.4

3-41: (a) The initial momentum is zero; a single photon cannot have zero momentum

(b)  $1.18 \times 10^{-14}$  [m]

3-44: 0.398 [W/m<sup>2</sup>]

4.13: 0.333 [nm]

4.15: 728 [m/s]

4.20:  $2.87 \times 10^{-14}$  [m],  $6.41 \times 10^{-12}$  [m]

4.31: (a), (b), (c)