Phys 3810, Spring 2012
Problem Set #3

1. *Griffiths*, **2.26**

2. *Griffiths*, **2.29**

3. *Griffiths*, **2.34** Transmission through a step potential.

On part (c) (whether or not you can show it) we are noting that the transmission coefficient is *not* the expression

$$T = \left|\frac{F}{A}\right|^2$$

that we would expect from the square–well example of the text. The particle that moves forward to the region of higher potential has what corresponds to a slower speed and that gives a lower measures flux of particles, so the quantity we want is

$$T \equiv \sqrt{\frac{E - V_0}{E}} \left|\frac{F}{A}\right|^2$$

but with this choice we get $T + R = 1$.

4. *Griffiths*, **2.45**