

## EC387 Introduction to Health Economics      Key to Problem Set 2

1. (20 points) FGS 8.7

A:  $Q = 10$ .

The fair price is probability, multiplied by expected expenditures, or  $0.25 * (10 * 20) = \$50$ .

2. (20 points) FGS 8.8

A: If they pay his entire expenses, this is equivalent to a price of 0. Hence Fred would buy  $Q = 50$ , incurring \$1000 in expenditures. The company could not continue to offer him insurance at the rate of \$50, as before, unless it limited the number of visits to 10, because of the increased quantity demanded, due to moral hazard. They may choose to offer him insurance at the new actuarially fair rate of \$250.

3. (30 points) FGS 11.5

A: Note error in supply equation. It should be  $L_s = -200 + 40W$ .

Equilibrium values

	$\underline{w}$	$\underline{L}$
a)	20.00	600.00
b)	18.67	586.67
c)	18.33	613.33

4. (30 points) FGS 11.7

A: a. Original profits = Revenues – labor costs – non-labor costs.  
 $= 120 - 80 - 40 = 0$ .

b. Elasticity =  $\frac{\left(\frac{\Delta L}{L}\right)}{\left(\frac{\Delta W}{W}\right)} = \frac{\left(\frac{-1}{9.5}\right)}{\left(\frac{+1}{8.5}\right)} = -8.5/9.5 = -0.895$ .

c. New profits =  $120 - (9 \times 9 \text{ workers}) - 45 = -6$ .

d. Charlie's long run decision would be not to offer the insurance. If he does, he cannot make enough profits to stay in business.