Econ 132 Fall 2019 SECOND MIDTERM EXAM (A): SOLUTIONS Cameron

<u>**Version A**</u>

1.(a)(i) D is optimum in absence of moral hazard.
(ii) H is optimum in presence of moral hazard.

(b) Buyers believe uniform on (50,90) given posted price of 90.
Expected value is (90+50)/2 = 70 with utility U(70)=1.2×70=84 < 90. **So do not buy.**

(c)(i) No. (As risk aversion rises consumers are more likely to purchase insurance even if it is offered at a premium above the actuarially fair premium).

(ii) Yes. (From the lecture notes and text there is no way to offer a single standardized policy).

2.(a) Easiest to answer per person. (Same ultimate answer if answer per 10 million people).
The marginal increase in costs per person is $250,000.
The marginal benefit per person is 0.5 life-years = 0.8 × 0.5 = 0.4 QALYs.
ICER = $250,000 / 0.4 = **$625,000**.

(b)(i) Let X = lifetime cost of drug.
We need ICER <= 100,000 so X / 0.4 <= 100,000 so X <= 0.4 × 100,000 = **$40,000.**

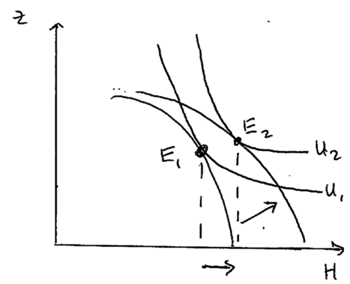
(ii) No. it is unlikely as only a small fraction of people would be getting the discount.

(c) Direct cost of screening the 10,000 = (# initial tests x $20) + (# confirmatory tests x $200)
Method A: The way done in class with false positive rate applied to all tested
= (10,000 x $20) + (90% of those with cancer + 10% of all those tested) x $200
= $200,000 + (0.9 x 100 + 0.1 x 10000) x $200 = $200,000 + (90+1000)x$200 = <u>$418,000</u>.
Method B: Alternative: false positive rate applied to only those without cancer
= (10,000 x $20) + (90% of those with cancer + 10% of those without cancer) x $20
= $200,000 + (0.9 x 100 + 0.1 x 9900) x $200 = $200,000 + (90 + 990) x $200 = <u>$416,000</u>.
Benefit of screening = # detected x $5,000 = 90 x $5,000 = $450,000.
The first test is **worthwhile** as marginal benefit exceeds marginal cost.

3.(a)	False	Adverse selection can occur even if there is no moral hazard.
(b)	False	Community-rating everyone pays the same price for the same policy (or if price varies by single/family or by age and usually not by income).
(c)	True	The U.S. is unusual in this respect.
(d)	False	Six tests is not optimal but is still better than zero tests.
(e)	True	The incremental cost-effectiveness ratio is a key tool.
(f)	True	Health care demand increases with income.

Version A (Continued)

4.(a)(i) This is movement out in the health possibilities curve.
(ii) Consumer equilibrium moves from E1 to E2 and health capital has increased, as drawn.



(b)(i) To explain the effect of illness the standard model needs to rotate the indifference map. The Grossman model instead leaves the indifference map unchanged and instead illness changes the ability to produce health capital.
(ii) High educated.

(c) Full credit given to all for this question as in Version B I asked a different question that I had not covered this year.
(i) Yes. Typically \$5 million - \$10 million.
(ii) No. Medicare is prevented from using cost-benefit analysis or cost effectiveness analysis.

5.(i) This is the average difference across years for the controls.
6046 – 5867 = **\$179.**

(ii) This is the average difference in year 1 between treated and controls.
6659 – 6046 = **\$613.** (Actually Stata will compute as -\$613).

(iii)-(iv) We have

	Treated	Control
Year==2014	5534	5867
Year==2016	6659	6046

Either (6659 – 5534) – (6046 – 5867) = 1125 - 179 = **\$946.**
Or (6659 - 6046) - (5534 - 5867) = 613 – (-333) = **\$946.**

(v) This is the difference in difference estimate. Whatever you got in (iii)-(iv).

(vi) This is obtained by regressing log expenditure on log income.

Multiple choice

Question	1	2	3	4	5	6
Answer	a	c	a	b	d	b

Scores out of 36 **Curve (Indication only: Course Grade is based on Total Score!)**

75th percentile	29 (81 %)	(Ave GPA 2.76 on this curve)		C+	24 and above
Median	26 (72 %)	A	30.5 and above	C	23 and above
25th percentile	23 (64 %)	A-	28.5 and above	C-	22 and above
		B+	27.5 and above	D+	21 and above
		B	26.5 and above	D	20 and above
		B-	25 and above	D-	19 and above