1. (a)(i) Point C (ii) Point F
(b)(i) Several answers including a bad health event (reducing ability to produce health) and a reduction in income.
(ii) The conventional model views utility as coming from consumption of health goods and other goods. But utility comes directly from the level of health, not from the amount of health goods and services consumed. The Grossman model allows for this complication.

2. (a) True From 5+% to 17%.
(b) False Normative issues involve value judgment.
(c) False The Rand experiment was unable to find lowered mortality.
(d) False It was randomized.
(e) True This is the reason DRG’s were established.
(f) True This is an example of learning-by-doing

3. (a) As coinsurance rate rises from 0% (free) to 95% health care use and expenses fall.
(b) Elasticity = - \( \frac{(777 - 630)}{\frac{(777 + 630)}{2}} \) = \( \frac{147}{703.5} = 0.208 \) = 0.104.
(c)(i) Income has risen by 25% (since \( 100 \times \frac{(50,000 - 40,000)}{40,000} = 25 \)).
So health care demand rises by 0.2 x 25% = 5 percent.
(ii) A broad range is from close to zero through to -0.25.

4. (b) Doctor PDV = \(-40 + \frac{60}{1.2} + \frac{144}{(1.2)^2} \) = \(-40 + 50 + 100 = 110 \).
College only PDV = \(30 + \frac{48}{1.2} + \frac{72}{(1.2)^2} \) = \(30 + 40 + 50 = 120 \).
College-only better as higher discounted present value. (You need to discount to get credit.)
4.(c)

\[ \text{Actuarial fair premium} = \mathbb{E}[X] = 0.05 \times 1000 + 0.95 \times 10000 = 50 + 9500 = 9550. \]

(ii) Both companies face the same expected loss of $5,000. So compare the standard deviations.
- Company A: \( \text{SD}(\overline{X}) = 1000 / \sqrt{100} = 100. \)
- Company B: \( \text{SD}(\overline{X}) = 5000 / \sqrt{10000} = 50. \)

Company A is exposed to greater risk.

5.(a)(i) Actuarial fair premium = \( \mathbb{E}[X] = 0.05 \times 1000 + 0.95 \times 10000 = 50 + 9500 = 9550. \)

(ii) Both companies face the same expected loss of $5,000. So compare the standard deviations.
- Company A: \( \text{SD}(\overline{X}) = 1000 / \sqrt{100} = 100. \)
- Company B: \( \text{SD}(\overline{X}) = 5000 / \sqrt{10000} = 50. \)

Company A is exposed to greater risk.

(c)(i) Adverse selection in an insurance market arises if different individuals have different expected losses and are able to reasonably estimate these expected losses, but insurance companies do not have this information.

(ii) Only those with loss in excess of $6,000 will buy insurance.
The expected loss of those insured will be $8,000 (= the mean of uniform on 6,000 to 10,000).
The insurance company will make a loss (of $2,500 per policy factoring in administration costs).

Multiple choice

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<th>2</th>
<th>3</th>
<th>4</th>
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Scores out of 36

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<td>25th</td>
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Curve (Indication only: Course Grade is based on Total Score!)
(Ave GPA 2.68 on this curve)

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