

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2002

Instructions:

- You have 2 hours and 30 minutes to complete this exam.
- You may use any books, notes, or other materials that you wish, but avoid spending too much time on any one question.
- **Partial credit may be awarded on all questions.**
- The maximum possible number of points is 200.
- You should have 7 pages, counting this one.

Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. All agents in an economy have $U = \ln x + \ln y$. 25% have 1 unit of x and 0 units of y . 75% have 0 units of x and 1 unit of y .

True, False, and Explain: $\frac{P_x}{P_y} = 3$.

2. True, False, and Explain: In a pure coordination game, repeated play strictly increases the number of NE.

3. "The economically correct argument is the most politically *incorrect* argument imaginable." (Landsburg, *The Armchair Economist*)

True, False, and Explain: Landsburg is explaining that laws restricting women's use of cosmetic surgery make women in general worse off.

4. A group of N oligopolists producing identical products plays a finite number of turns. Two of the players are then randomly selected to play a Hawk-Dove game ONCE.

True, False, and Explain: With rational, selfish players, some degree of collusion may be sustainable under Cournot competition, but NOT Bertrand competition.

5. True, False, and Explain: One piece of empirical evidence against expected utility theory is that people gamble and play lotteries.

6. In a "market for lemons," the true value of cars to sellers is uniformly distributed on the interval $[0,100]$. Buyers value cars at 25% more than sellers. Now suppose that buyers in this market do NOT have rational expectations, but sellers do. To be specific, buyers believe the quality of the average car available for sale is as high as the quality of the average car not available for sale.

True, False, and Explain: This market with asymmetric information and irrational expectations is as efficient as a comparable market with symmetric information and rational expectations.

7. After several decades, the government finally eliminates sugar subsidies in 2005. The sugar industry is thrown into a severe crisis and many plantations go bankrupt.

True, False, and Explain: This is strong evidence that sugar executives did not have rational expectations about government sugar policy.

8. In experiments on the endowment effect, some people are given mugs and asked to sell them back, while others are merely given the opportunity to buy a mug. The Coase Theorem predicts that mugs will sell for the same price in both treatments.

True, False, and Explain: Thaler admits that transactions costs make it impossible to give a clear experimental prediction about mug prices.

9. In a "psychologist/engineer" problem, the base rate is 70% engineers, 30% lawyers. Fred's $P(\text{having a pocket protector} | \text{a person is an engineer}) = .5$, and $P(\text{a person is an engineer} | \text{having a pocket protector}) = .8$. If the base rate is changed to 30% engineers, 70% lawyers, Fred's $P(\text{a person is an engineer} | \text{having a pocket protector})$ falls to .3.

True, False, and Explain: Fred does NOT suffer from representativeness bias.

10. More educated workers tend to enjoy their work more and are less likely to be unemployed.

True, False, and Explain: BOTH of these factors bias standard estimates of the return to education *downwards*.

11. True, False, and Explain: The "liquidity constraints" and "debt aversion" explanations for observed departures from consumption smoothing are empirically indistinguishable.

12. Wittman argues that "concentrated benefits, diffuse costs" problems could be overcome with an omnibus repeal bill.

True, False, and Explain: According to Wittman, theorists such as Fiorina and Noll and Shepsle and Weingast rule out such an omnibus repeal by assuming that elections are not competitive.

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer all three of the following questions.

1. Governments sometimes give away services, such as health care, without charge. Assuming there is no rationing, use a supply-and-demand diagram to show the deadweight costs of this policy relative to the competitive equilibrium. Explain your diagram, and discuss the implications for moral hazard in insurance.

2. Suppose your $EU=w^3$, and insurance is sold at 10% more than the actuarially fair rate. Your uninsured income is \$100,000 with $p=.5$, and \$50,000 with $p=.5$. Using this information, do the following: (a) Calculate your coefficient of absolute risk aversion. (b) Solve for your optimal quantity of insurance, i .

3. What is the one thing you learned in this class that has the highest PRIVATE value for you? What is the one thing you learned in this class that would have the highest SOCIAL benefit if it were widely understood? In other words, what is the most useful lesson you learned for your own behavior, and what is the most useful lesson society could learn for policy? Explain your answers.

4. Caplan argues that systematically biased beliefs about economics lead to inefficient policies. Part of the motivation for his survey of intelligence research is his view that public opinion has systematically biased views on this topic as well. In a democracy, what *consequences* of these biases might Caplan predict for education policy? How would Wittman respond? Who is right?

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Economics 812 Final
Prof. Bryan Caplan
Spring, 2003

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following twelve propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. According to Caplan (SEJ 1999), "[I]f there is a small probability that one is delusional, the perception of a zero-probability event would rationally provoke one to doubt one's own perception rather than believe that the impossible has occurred."

True, False, and Explain: **Caplan's conclusion can be logically deduced from Bayes' Rule if delusional people have a strictly positive probability of *thinking* they observe 0-probability events, non-delusional people have a 0 probability of *thinking* they observe 0-probability events, and $P(\text{you're sane}) > P(\text{you're insane}) > 0$.**

2. Suppose that two players play this PD game 100 times in a row:

		Player 2	
		Coop	Defect
Player 1	Coop	2,2	0,3
	Defect	3,0	1,1

Afterwards, they *simultaneously* play an Ultimatum game where Player 1 splits a total payoff of 1 between himself and Player 2.

True, False, and Explain: **Cooperation in this game will "unravel" due to backwards induction.**

Questions 3 and 4 refer to the following information.

There is an industry with a fixed cost and constant MC. 2 firms simultaneously decide whether to enter the industry. Firms set prices, not quantities.

3. True, False, and Explain: **If the fixed costs are NOT sunk, there are two PSNE. If the fixed costs ARE sunk, there is a MSNE but no PSNE.**

4. True, False, and Explain: **The outcome of the game is more efficient if costs are sunk.**

5. Suppose your $EU = w \cdot^9$, and insurance is sold at 1% more than the actuarially fair rate. Without insurance, your wealth is \$10,000 with $p = .5$ and \$0 with $p = .5$.

True, False, and Explain: **You will fully insure.**

6. Suppose that everyone overestimates their personal probability of death by 50%.

True, False, and Explain: **There will be propitious selection in the market for life insurance.**

7. "Most things in life don't turn out as well as you thought they would. While psychologists, poets, and philosophers have often remarked on this phenomenon, few have recognized that it is a necessary consequence of informed, rational decision making." (Landsburg, *The Armchair Economist*)

True, False, and Explain: **If by "rational," Landsburg means "rational expectations," his last statement is incorrect.**

8. True, False, and Explain: **Caplan (Stigler-Becker vs. Myers-Briggs) claims that empirical personality research strongly contradicts the standard economic assumption of stable preferences.**

9. A critic of behavioral economics runs the following experiment. Half of the subjects guess the populations of twenty countries. The remaining subjects try to list as many people as they can from each of the twenty countries. The true populations of these countries are known to the experimenter.

True, False, and Explain: **This data can be used to test for availability bias.**

10. More educated workers tend to enjoy their work more.

True, False, and Explain: This tends to bias standard estimates of the return to education *downwards*.

11. True, False, and Explain: A standard neoclassical agent with diminishing marginal utility of wealth and access to perfect capital markets will always have a constant level of consumption.

12. True, False, and Explain: Caplan ("Rational Irrationality and the Microfoundations of Political Failure") argues that asymmetric information leads rational voters to vote for policies that encourage rent-seeking.

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following four questions.

1. For an infinitely-repeated 3-firm oligopoly game, determine the critical value of β for Bertrand collusion enforced by punishments of just ONE turn of Nash reversion.

2. Suppose you are a fully rational individual living in a closed society like North Korea where all news is tightly monitored by the government. Explain in detail how you would go about forming rational beliefs under these conditions. What are the main conclusions you would draw?

3. What would prevent Beckerian optimal punishment from driving efficiency wages down to the market-clearing level? Discuss at least TWO mechanisms.

4. How does the endowment effect influence democratic politics? Discuss in general terms, and give the most plausible example you can. How might a paternalistic economist take advantage of the electorate's endowment effect? A self-interested demagogue?

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Economics 812 Final
Prof. Bryan Caplan
Spring, 2004

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Suppose you have a betting market for the 2004 presidential election. The price of "Bush wins" shares sell for twice as much as "Bush does not win" shares.

True, False, and Explain: **As long as Arrow-Debreu assumptions and expected utility theory hold, this shows that the marginal trader believes that Bush will win with $p=2/3$.**

2. Suppose that two players play the following three games in order: Ultimatum game, Coordination game, Prisoners' Dilemma.

True, False, and Explain: **Standard game theory predicts that this game will completely "unravel."**

3. Suppose you have a 2-player version of the voluntary donation game from the notes, with one difference: Each agent cares somewhat about the other, so player one maximizes $U_1=c_1D+.7*c_2D$, and player two maximizes $U_2=c_2D+.7*c_1D$.

True, False, and Explain: **In symmetric Nash equilibrium, $c_1=c_2>4/7$.**

4. Economists often argue that the public overestimates the president's ability to influence the economy.

True, False, and Explain: **Caplan ("Systematically Biased Beliefs About Economics") confirms the existence of this bias.**

5. Critics of the RE assumption often complain that it leads economists to underestimate the chance of market failure. It is not surprising, they maintain, that markets work well if everyone is "hyper-rational."

True, False, and Explain: **The critics are correct given symmetric information, but the opposite might be true under asymmetric information.**

6. True, False, and Explain: **Thaler (*The Winner's Curse*) ignores Milton Friedman's contention that economic theories can have unrealistic assumptions as long as they make accurate predictions.**

7. Suppose your $U=w^6$. You are searching for a job and face the following decision tree:

Step 1: You can either take a sure thing ($w=\$50,000$ with $p=1$) or keep searching ($w=\$100,000$ with $p=.6$; $w=\$0$ with $p=.4$).

Step 2: If you selected the second option, you are allowed to buy an "unemployment insurance" policy. It costs \$10,000 and pays \$25,000 if you are unemployed.

Step 3: You find out if you got a job. If you did not, you collect the insurance payout. Either way, you have to pay the premium.

True, False, and Explain: **You will take the sure thing.**

8. The U.S. stock market did not noticeably rise right after Saddam Hussein was captured.

True, False, and Explain: **The only explanation, according to the Efficient Markets Hypothesis, is that Saddam's capture had no important effect on the overall U.S. economy.**

9. Rationally ignorant voters could punish dishonest politicians by increasing the punishment for hard-to-detect offenses.

True, False, and Explain: **One reason that fully rational voters might fail to use this strategy is a coordination problem.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Suppose that on an island there are equal numbers of two types of agents. The Type A's have $U = .9 \ln x + .1 \ln y$; the Type B's have $U = .1 \ln x + .9 \ln y$. Both kinds of agents start out with 1 unit of x and 1 unit of y . Compare and contrast the equilibrium outcomes in markets versus pair wise bargaining. To be more precise, what happens if (a) Everyone participates in an island-wide general equilibrium market; (b) Each person of Type A bargains with one person of Type B? *You do **NOT** need to solve for the exact numbers*; just qualitatively describe the differences between the two cases. Is there any reason to expect the two outcomes to be the same?

2. Based on all of the empirical evidence we have considered, did you overestimate your PRIVATE rate of return of getting a Ph.D. when you decided to go to grad school? Did you overestimate the SOCIAL rate of return? Defend your answer by explaining how the evidence has led you to modify your initial beliefs.

3. Caplan's critics have argued that his own work shows important positive externalities of education. Why would they say this? How might Caplan respond? Who is correct?

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Prof. Bryan Caplan
Spring, 2005

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. True, False, and Explain: "Buy one, get one free" deals are normally Kaldor-Hicks inefficient.

2. Suppose that two players play this PD game, followed by this Coordination game.

	Defect	Don't
Defect	3,3	4,0
Don't	0,4	2,2

	L	R
L	5,5	0,0
R	0,0	5,5

True, False, and Explain: If $\beta=.9$, the only SGPNE are (Defect, Defect), (L,L) and (Defect, Defect), (R, R).

3. Suppose firms in an industry have the same cost function, including a *sunk cost*. Product demand rises, leading to a doubling of potential monopoly profits. Two firms play mixed strategies to decide whether to enter.

True, False, and Explain: The probability that both firms enter and lose money quadruples.

4. An agent faces two choices: (1) A utility of 10 for sure; (2) A utility of 1 with 50% probability and a utility of 20 with 50% probability.

True, False, and Explain: **If the agent prefers (1) to (2), then in terms of Expected Utility Theory, he is risk-averse.**

Questions 5 and 6 refer to the following information:

There are two kinds of workers, good and bad. Both types are equally numerous. Good workers are worth \$100k to me; bad workers are worth \$25k to me. It costs good workers \$25k to complete school, but \$50k for bad workers to do so. I can tell if a worker finished school, but cannot observe their quality directly. Workers earn 75% of their value to me if they choose to be self-employed.

5. True, False, and Explain: **I will not hire any workers, so asymmetric information entails no deadweight cost.**

6. Suppose I can find out a worker's true type by paying \$15k.

True, False, and Explain: **I will never pay this fee, because my expected gross profit per worker is only $50% * (\$100k - \$75k) = 12.5k$.**

7. Some economists argue that the perceived unfairness of nominal wage cuts would decline in a less inflationary environment.

True, False, and Explain: **According to Rabin ("Psychology and Economics"), there is no experimental evidence that perceptions of fairness respond to changes in market conditions.**

8. More educated workers usually get more benefits.

True, False, and Explain: **This tends to bias standard estimates of the return to education *downwards*.**

9. True, False, and Explain: **Caplan ("Rational Irrationality and the Microfoundations of Political Failure") admits that "knife-edge stupidity" does not exist.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Consider the following sequential two-player games:

Game 1: Ultimatum game, Coordination game, Ultimatum game

Game 2: Coordination game, Ultimatum game, Coordination game

If both players are standard economic agents, will Game 1 "unravel"? Game 2?
Explain your reasoning.

2. Caplan's "Systematically Biased Beliefs About Economics" finds that economists worry *less* about high taxes than the general public. Do you think this undermines the view that economists have rational expectations and the public does not? Explain your answer, then present a good counter-argument to your view.

3. It is widely believed that standard neoclassical economics supports free-market conclusions, while behavioral economics supports government intervention. Give two counter-examples. Explain your reasoning.

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Economics 812 Final
Prof. Bryan Caplan
Spring, 2006

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Suppose 35% of all agents in an economy have $U = \ln x + \ln y$, and the other 65% have $U = .5 \ln x + \ln y$. All agents start with one unit of x and three units of y .

True, False, and Explain: **In general equilibrium, exactly 65% of the agents consume more y than x .**

2. Suppose that two players play the following game.

	Left	Right
Left	0,0	4,2
Right	$x,4$	0,0

For Type A players, $x=6$; for Type B players, $x=1$. Players know both their own type and their opponent's type.

True, False, and Explain: **If Player 1 is Type A, there is no MSNE. If Player 1 is Type B, there is a MSNE, but since it is not focal, in practice we would not expect it to happen.**

3. True, False, and Explain: **Cournot competition with free entry, zero fixed costs, and constant marginal costs leads to a perfectly efficient outcome.**

4. Suppose demanders of insurance are risk-averse, but suppliers of insurance are risk-neutral.

True, False, and Explain: **As long as they have rational expectations, demanders will buy some insurance.**

Questions 5 and 6 refer to the following information:

There are two kinds of workers, good and bad. Both types are equally numerous. Good workers are worth \$100k to me; bad workers are worth \$25k to me. It costs both kinds of workers \$5k to finish school. I can tell if a worker finished school, but cannot observe their quality directly. Workers earn 40% of their value to me if they choose to be self-employed. Finally, assume that if a worker fails to go to school, I automatically conclude that he is bad.

5. True, False, and Explain: **Everyone goes to school and earns the same wage.**

6. Suppose workers earn **80%** of their value to me if they are self-employed.

True, False, and Explain: **Only bad workers will go to school, and will earn a net wage (wages minus schooling costs) of \$20k.**

7. "[L]oss aversion says that the value function abruptly changes slope at the reference level, so that people dislike even small-scale risk."

"While people are likely to be risk averse over gains, they are often risk-*loving* over losses." (both quotes from Rabin, "Psychology and Economics")

True, False, and Explain: **These two statements are inconsistent.**

8. Suppose that education causes a temporary increase in intelligence, but the effect "fades-out" after a year.

True, False, and Explain: **Controlling for intelligence, the estimated effect of education is downwardly biased.**

9. Caplan argues that irrationality has psychological benefits for many – if not most – people.

True, False, and Explain: **Economic theory cannot say whether the private psychological benefits of irrationality exceed its social costs.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Suppose you have two potential producers in a contestable industry with SUNK costs. $TC=1000+10Q$. Demand is given by $Q=100-P$. In a MSNE, what is the probability that there are (a) 0 firms; (b) 1 firm; (c) 2 firms?

2. Caplan's "Systematically Biased Beliefs About Economics" controls for various measures of self-serving bias and ideological bias. Argue that he **should not** have controlled for these variables, and that as a result, his final estimates underestimate the magnitude of the public's biases. (Hint: What is the direction of causation?)

3. Clearly explain how a behavioral anomaly of your choice helps to mitigate a market failure of your choice. Be as original as possible.

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Economics 812 Final
Prof. Bryan Caplan
Spring, 2007

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. True, False, and Explain: **Prices in betting markets are determined by agents' preferences and endowments, not objective probabilities. However, if some people have more accurate beliefs than others, then over time, prices become more and more likely to reflect objective probabilities.**

2. Suppose that two players play the following game twice.

	Left	Right
Left	1,5	0,0
Right	0,0	5,1

True, False, and Explain: **What Kreps calls "cheap talk" cannot improve the efficiency of this game *if* both players engage in backwards induction.**

3. Suppose you have a 2-player version of the voluntary donation game from the notes, with one difference: Each agent *dislikes* the other, so player one maximizes $U_1 = c_1D - .2 * c_2D$, and player two maximizes $U_2 = c_2D - .2 * c_1D$.

True, False, and Explain: **In symmetric Nash equilibrium, $c_1 = c_2 < 2/3$.**

4. Suppose your $U=w^5$. You are searching for a job and face the following decision tree:

Step 1: You can either take a sure thing ($w=\$50,000$ with $p=1$) or keep searching ($w=\$100,000$ with $p=.6$; $w=\$0$ with $p=.4$).

Step 2: If you selected the second option, you are allowed to buy an "unemployment insurance" policy. It costs $\$10,000$ and pays $\$20,000$ if you are unemployed.

Step 3: You find out if you got a job. If you did not, you collect the insurance payout. Either way, you have to pay the premium.

True, False, and Explain: You will keep searching and decline to buy insurance.

5. Consider a risk-neutral farmer with the cost function $TC=q^5$. The market price is 3 with $p=.5$, and 0 with $p=.5$.

True, False, and Explain: If the farmer has RE, he sets $q=1/3$. If the farmer's beliefs do not satisfy RE (he thinks the price=3 with $p=.2$), his profits fall by 50%.

6. **True, False, and Explain: Landsburg argues that cosmetic surgery is socially wasteful signaling.**

7. Thaler (*The Winner's Curse*) presents evidence that people violate basic economic assumptions.

True, False, and Explain: **Thaler nevertheless embraces basic economic assumptions as "normative"; he believes that people *should* act like standard economic agents.**

8. Consider an efficiency wage model.

True, False, and Explain: **As the average worker becomes less *selfish*, the unemployment rate falls. As the average worker becomes more *myopic*, the unemployment rate rises.**

9. True, False, and Explain: **If the efficient markets hypothesis is correct, then the marginal private cost of irrational investing can easily be zero.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Suppose that on an island there are equal numbers of two types of agents. The Type A's have $U = .8 \ln x + .2 \ln y$; the Type B's have $U = .2 \ln x + .8 \ln y$. Both kinds of agents start out with 1 unit of x and 1 unit of y . Compare and contrast the equilibrium outcomes in markets versus pair wise bargaining. To be more precise, what happens if (a) Everyone participates in an island-wide general equilibrium market; (b) Each person of Type A bargains with one person of Type B? *You do **NOT** need to solve for the exact numbers*; just qualitatively describe the differences between the two cases. Is there any reason to expect the two outcomes to be the same?

2. Caplan defends the signaling model of education, but his colleague Tyler Cowen responds: "If education is pure signaling, just give everyone a standardized test in seventh grade and then close up the schools." (*Marginal Revolution*) How does Caplan's lecture on intelligence research make him vulnerable to this objection? How could Caplan's views about personality ("Stigler-Becker vs. Myers-Briggs") allow him to answer Cowen's objection?

3. "If voter misinformation were an important reason for poor policy choices, then we should be able to observe more informed voters making better policy choices. For example, college-educated people probably have more informed opinions: perhaps their professors told them that there is too much pork barrel politics. Hence, college-educated persons would be the least likely to be in favor of more government spending (unless they are the recipients of such largess), and persons with only a grade school education should be the most likely. However, survey data do not support such a conclusion." (Wittman, "Why Democracies Produce Efficient Results")

To what extent does Caplan's "What Makes People Think Like Economists?" undermine Wittman's claim? Be careful to distinguish between Wittman's specific claims and Caplan's empirical findings.

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Economics 812 Final
Prof. Bryan Caplan
Spring, 2008

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Consider the general equilibrium intertemporal model.

True, False, and Explain: **A fall in interest rates definitely indicates that expected income growth has declined.**

2. True, False, and Explain: **In *The Armchair Economist*, Landsburg defends the market as a Darwinian mechanism that weeds out inefficiency.**

3. Consider a simple game-theoretic model of bargaining.

True, False, and Explain: **With fully rational agents, one MSNE and no PSNE exist. With imperfectly rational agents (or at least some uncertainty about whether other players are fully rational), there is one MSNE and two PSNE.**

4. Suppose a woman has $EU = w \cdot 0.5 + X$. If the woman has a baby boy, $X = -10$; if she has a baby girl, $X = 5$; if she has no child, $X = 0$. Normally, she is equally likely to have a boy or a girl. But if she pays a price P , she can determine her child's gender with certainty. Suppose further that w initially equals \$400, and the P is the only cost associated with having children.

True, False, and Explain: **The woman will remain childless if $P > 87.5$.**

5. True, False, and Explain: **Asymmetric information problems do not require irrationality, but irrationality makes asymmetric information problems more severe.**

6. Caplan ("What Makes People Think Like Economists?") shows that more educated people are more pro-market.

True, False, and Explain: **The reason why people mistakenly believe that education leads to anti-market views is probably that, in the general population, education and left-wing ideology are highly correlated.**

7. Standard estimates of the return to education ignore intelligence and assume that all education is productive.

True, False, and Explain: **For both of these issues, switching to more realistic assumptions reduces the private and social return to education.**

8. True, False, and Explain: **There is no change in current U.S. policy that would do much to mitigate moral hazard problems.**

9. Suppose Caplan is right that voters “buy” large quantities of irrational political beliefs.

True, False, and Explain: **This hardly shows that political markets are inefficient. Instead, it shows that we have mismeasured their primary output; the main product of political markets is psychological well-being rather than wealth-maximizing policy.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Taking into account everything that you have learned, what is the *most efficient* way for government to raise a given level of revenue? Carefully explain your answer.

2. Taking into account everything you have learned, sketch your best explanation for why the U.S. *political* system allowed the subprime crisis to happen.

3. In a critique of *The Myth of the Rational Voter*, Dan Klein writes: “Maybe Bryan grants Wittman’s other premises so as to pump the importance of the unbiased belief premise.” Why would granting Wittman’s other premises “pump up” the importance of voter bias? Is Klein’s suggestion correct? Why or why not?

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2009

Instructions:

- You have 2 hours and 30 minutes to complete this exam.
- **Write directly on the exam.**
- You may use any books, notes, or other materials that you wish, but avoid spending too much time on any one question.
- **Partial credit may be awarded on all questions.**
- The maximum possible number of points is 150.
- You should have 6 pages, counting this one.

Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. True, False, and Explain: **In a general equilibrium framework, “fiscal stimulus” can’t work, because the funding for the stimulus package has to come from somewhere.**

2. Suppose there are an infinite number of equally efficient potential producers.

True, False, and Explain: **With constant MC and zero fixed costs, there are an infinite number of PSNE and an infinite number of MSNE.**

3. Landsburg (“People Wanted”) argues that there are positive externalities of population growth.

True, False, and Explain: **Search theory suggests that Landsburg actually understates the case for higher population.**

4. Consider a simple asymmetric information model: The “true value” of a company to sellers is uniformly distributed along $[0,100]$, and the value to buyers is 50% more than to sellers.

True, False, and Explain: **In theory, irrationality could increase or decrease market efficiency; in practice, however, experiments show that irrationality makes this “market for lemons” less efficient.**

5. True, False, and Explain: **Moral hazard models predict that the people with the most insurance will take the most risks, but adverse selection models predict the opposite.**

6. More educated workers normally have lower unemployment rates than less educated workers.

True, False, and Explain: **The efficiency wage model can explain this pattern.**

7. True, False, and Explain: In signaling models, selfish agents might voluntarily supply public goods.

8. True, False, and Explain: According to Caplan's rational irrationality model, political betting markets are especially likely to make biased predictions.

9. In most countries, the median voter favors protectionism.

True, False, and Explain: One Wittmanian explanation is that the benefits of free trade are unevenly distributed; free trade raises Americans' average income, but the median American voter is still worse off.

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Suppose that greeting other people is a special kind of Coordination game. We are in the equilibrium where everyone shakes hands; but there is an equally polite equilibrium where *no one* shakes hands. The only bad result is when some people offer to shake hands, and others refuse. How you would modify this simple model to account for the rise of swine flu – a disease that might be spread by hand-shaking? Is it possible for this disease to change the number of equilibria in the game? Explain using both words and a normal form.

2. The economic events of 2008 are widely seen as “disproving” the RE hypothesis. What is the most compelling RE account of 2008 you can think of? Give details.

3. Use Caplan's article "Stigler-Becker vs. Myers-Briggs" to argue that, in practice, behavioral anomalies matter much less in the real-world than most behavioral economists suggest. (Hint: Self-selection) Give TWO empirically important examples.

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Economics 812 Final
Prof. Bryan Caplan
Spring, 2010

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- The maximum possible number of points is 120.
- You should have five pages, counting this one.

Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. True, False, and Explain: **In the real world, lump-sum taxes are always the *first-best* efficient way for governments to raise a given amount of revenue.**

2. Suppose you have two potential producers in a contestable industry with SUNK costs. $TC=10+Q$. If only one firm enters, it sets a monopoly price given the demand curve $Q=10-2P$. If two firms enter, they compete price down to MC.

True, False, and Explain: **In the MSNE, each firm's probability of entry is .2.**

3. True, False, and Explain: **Kreps uses the Ellsberg Paradox to illustrate the effects of asymmetric information on consumer choice.**

4. Suppose *everyone* is risk-preferring.

True, False, and Explain: **Insurance markets can still exist.**

5. “Consider two professors. John earns \$55,000 paid in monthly installments. Joan earns a base salary of \$45,000 paid over twelve months, and a guaranteed extra \$10,000 paid during the summer months.” (Thaler, *The Winner’s Curse*)

True, False, and Explain: **Thaler explains that the “mental accounting” prediction is that Joan will outspend John during the summer, but John will outspend Joan throughout the rest of the year.**

6. True, False, and Explain: **Caplan (“Rational Irrationality and the Microfoundations of Political Failure”) argues that irrationality leads (a) voters to give bureaucrats weak financial incentives for hard work, AND (b) bureaucrats to work hard despite their weak financial incentives to do so.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Suppose that on an island there are equal numbers of two types of agents. The Type A's have $U = .8 \ln x + .2 \ln y$; the Type B's have $U = .2 \ln x + .8 \ln y$. Both kinds of agents start out with 1 unit of x and 1 unit of y . Compare and contrast the equilibrium outcomes in markets versus pair wise bargaining. To be more precise, what happens if (a) Everyone participates in an island-wide general equilibrium market; (b) Each person of Type A bargains with one person of Type B? *You do **NOT** need to solve for the exact numbers; just qualitatively describe the differences between the two cases. Is there any reason to expect the two outcomes to be the same?*

2. Suppose you want to test for RE about inflation. You can either get data on (a) actual inflation and people's inflation forecasts, *or* (b) experts' inflation forecasts and laymen's inflation forecasts. State whether you would prefer to have (a) or (b), and carefully explain how your test would work. When exactly would your test accept/reject the RE hypothesis?

3. "Availability bias leads people to get less education. Representativeness bias leads people to get more education." Explain why this sentence is plausible. Give specific examples.

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Economics 812 Final
Prof. Bryan Caplan
Spring, 2011

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. In a world with no externalities, suppose the government imposes a lump sum tax and uses it to fund an hourly work subsidy.

True, False, and Explain: **The deadweight cost of this tax-and-subsidy policy is zero.**

2. Suppose two people repeatedly play the Dictator game. Player 1 gets to be the Dictator in odd-numbered turns; Player 2 gets to be the Dictator in even-numbered turns. $\beta \leq 1$ for both players. After each turn, the game ends with 99% probability.

True, False, and Explain: **An equilibrium where the Dictator always offers even splits (50/50) may be sustainable if the stakes increase over time.**

3. Consider a simple auction.

True, False, and Explain: **As long as actors have RE, the Winner's Curse will not cause the market to "unravel."**

4. “The average person considers himself better than average by a variety of measures. But vulnerability to such biases is still far from universal. Robins and John (1997) surprisingly report that ‘only about 35 percent of the subjects show a clear self-enhancement bias whereas about 50 percent are relatively accurate and about 15 percent actually show self-diminishment bias’ (p. 669).” (Caplan, “Stigler-Becker vs. Myers-Briggs”)

True, False, and Explain: **By itself, this result suggests that self-enhancement bias will affect market outcomes, but not democratic outcomes.**

5. Suppose foregone earnings are the sole cost of education, and people live forever. Without school, workers earn \$10,000 per year; every year of school *completed* boosts earnings by 10%.

True, False, and Explain: **Without externalities, the social rate of return to education is 10%.**

6. True, False, and Explain: **Wittman admits that in a federal system, restraining government spending is a public good.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Historians often argue that wars arise due to irrationality, not just bad luck. What simple game theory model are historians implicitly rejecting? How could historians use Thaler's *The Winner's Curse* to persuasively defend their position? Be specific.

2. "Contrary to e.g. Krugman, insurance isn't a 'special' market where laissez-faire doesn't work. Instead, it's a normal market where democratic politics doesn't work, because both the public and economists remain wedded to populism and paternalism." (Me on my blog)

Carefully explain why I would say this. Name two examples I might use to support my position. Am I right? Why or why not?

3. Workers deeply resent nominal wage cuts. Voters deeply resent inflation. Use these two stylized facts to build a simple, depressing model of the economic and political effects of negative shocks to Aggregate Demand. Make sure you discuss the *interaction* between economics and politics.

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2012

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. True, False, and Explain: **A lump-sum tax is theoretically the most efficient way to raise a given amount of government revenue, but it is impractical in the real world.**

2. Consider a two-period world. Agents have $U = \sqrt{c}$. In period one, everyone has a chance to buy or sell insurance for consumption in period 2. In period 2, each person receives an endowment of 0 with $p=.5$ and 4 with $p=.5$ (each person makes an independent draw from the probability distribution). There are no transactions costs.

True, False, and Explain: **In general equilibrium, the price of insurance is actuarially fair.**

3. Consider a risk-neutral farmer with the cost function $TC=q^2$. The market price is 10 with $p=.7$, and 1 with $p=.3$.

True, False, and Explain: **If the farmer has RE, his profit-maximizing level of output is 4.**

4. True, False, and Explain: **Efficiency wages cease to encourage work effort if all employers pay efficiency wages.**

5. Suppose the Russian government suddenly decides to privatize its oil fields.

True, False, and Explain: **If Russian voters suffer from debt aversion, we should expect their government's spending to increase.**

6. "If politicians create an agency, give it the incentives that it has, and retain the power to abolish it or change its incentives at any time, in what sense are politicians *not* to blame for everything the agency does?" (Caplan, "Rational Irrationality and the Microfoundations of Political Failure")

True, False, and Explain: **Caplan is arguing that politicians are being irrational when create independent agencies.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. “Behavioral economics actually makes me *more* optimistic about the efficiency of the economy.” Name the two strongest empirical findings the optimist could cite. Then make his case for him.

2. Build on Kahneman’s chapter on “Answering an Easier Question” (*Thinking, Fast and Slow*) to explain a large belief gap between economists and the public on two questions from the Survey of Americans and Economists on the Economy.

3. All things considered, what is your best estimate of the true private return to education for the marginal 18-year-old American? The true social return? Use empirics from class to ground your answer.

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2013

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Two players are deciding whether to contribute to a public good. The public good is discrete: it is produced at the optimal level so long as one person contributes. If the public good is produced, everyone gets a benefit of 3 if they didn't contribute, and 2 if they did. If no one contributes, everyone gets 0.

True, False, and Explain: **This is a Prisoners' Dilemma, not a Hawk-Dove game.**

2. Suppose the demand curve for a contestable monopoly crosses the AC curve at three points.

True, False, and Explain: **There is a unique equilibrium.**

3. Suppose insurance companies are perfectly competitive and know true accident probabilities. All of their potential customers are risk-neutral, but have a subjective $P(\text{getting in an accident})$ equal to the square root of the objective $P(\text{getting in an accident})$.

True, False, and Explain: **All potential customers will definitely buy insurance.**

4. “Economic theory predicts that you are not enjoying this book as much as you thought you would.” (Landsburg, *The Armchair Economist*)

True, False, and Explain: **As Landsburg shows, neoclassical economics is not only consistent with, but *implies*, violation of the rational expectations assumption.**

5. Suppose the entire return to education stems from signaling. The signal, however, is noisy; some good workers don't have degrees, and some bad workers do.

True, False, and Explain: **The measured return to education will fall to zero if you fully control for ALL of the traits that education signals.**

6. Voter's rational ignorance creates a moral hazard problem for politicians.

True, False, and Explain: **As usual, there is a simple way to mitigate this moral hazard problem.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. In the modern U.S., what is the most *efficient* way for the federal government to spend an extra billion dollars? What is the maximally *utilitarian* way for the federal government to spend this sum? (In both cases, assume that tax cuts are not an option). Use everything you've learned to craft a thoughtful answer, and be specific.

2. Some people argue that nominal wage rigidity is individually rational because many people (especially home-owners) have large nominally-denominated debt. Is this a sound argument? Why or why not?

3. Paul Krugman recently accused anti-Keynesians of being “knaves and fools.” What would Kahneman say about this accusation? Use *Thinking, Fast and Slow* to craft a thoughtful reply.

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2014

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following nine propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Some economists worry that economies will become increasingly unequal if the real interest rate r exceeds the rate of economic growth g .

True, False, and Explain: **In an intertemporal general equilibrium consumption model, the real interest rate r cannot exceed the rate of economic growth g .**

2. True, False, and Explain: **In a Coordination game – like a Prisoners' Dilemma – agents do not need communication to reach a PSNE.**

3. An agent faces two choices: (1) A utility of 10 for sure; (2) A utility of 0 with 50% probability and a utility of 20 with 50% probability.

True, False, and Explain: **If the agent is indifferent between (1) and (2), then in terms of Expected Utility Theory, he must be risk-neutral.**

4. “No one really has preferences for fair or vindictive behavior. When people act ‘fairly’ or ‘vindictively,’ they’re just signaling.”

True, False, and Explain: **This claim is not theoretically consistent with the signaling model.**

5. “The initial attempt to believe is an automatic operation of System 1, which involves the construction of the best possible interpretation of the situation.” (Kahneman, *Thinking, Fast and Slow*)

True, False, and Explain: **This model of belief formation implies that lies are persuasive because people are *usually* telling the truth.**

6. Senior #1 and Senior #2 are both undergraduates in their final year of college. Senior #1 knows he has a 90% chance of successfully graduating this year. Senior #2 knows he has a 90% chance of failing out. Both students satisfy the Permanent Income Hypothesis.

True, False, and Explain: **Both students will increase their consumption if they successfully graduate, but Senior #1 will increase his post-graduation consumption by a smaller fraction than Senior #2.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. In the real world, what would happen if a restaurant adopted Landsburg's system for splitting checks? (*The Armchair Economist*)

2. Use the signaling model of education to explain the sheepskin effect. Precisely specify why, in the real world, *discrete* educational achievement is so much more informative to employers than *continuous* educational achievement.

3. The nominal wage rigidity model blames unemployment on nominal wages' failure to swiftly fall to market-clearing levels. Can this model also explain the fact that high-ability workers are less likely to lose their jobs during recessions? If not, how can you modify the nominal rigidity rigidity model to explain why recessions hit low-ability workers harder?

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2015

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Agents are endowed with 2 units of good 1 and 1 unit of good 2. There are two types of agents:

Type A: One-third of the agents have $U = \ln c_1 + 2 \ln c_2$.

Type B: The other two-thirds have $U = \ln c_1 + \ln c_2$

True, False, and Explain: **The price of good 2 will be at least 50% higher than the price of good 1.**

2. Suppose all firms in an industry have the same cost function $TC = a + bq$.

True, False, and Explain: **Contestable monopoly and Bertrand competition both lead to "first-best" efficient outcomes if $a=0$, and "second-best" efficient outcomes if $a>0$.**

3. Suppose your $EU = w \cdot 5$, and insurance is sold at 50% more than the actuarially fair rate. Your uninsured income is \$10,000 with $p=.5$, and \$0 with $p=.5$.

True, False, and Explain: **Your optimal quantity of insurance $> \$1000$.**

4. True, False, and Explain: **Results from Caplan (“Systematically Biased Beliefs About Economics”) suggest that the general public is no more sympathetic to the signaling model of education than Ph.D. economists.**

5. True, False, and Explain: **Paying efficiency wages is a Prisoners’ Dilemma, because it’s impossible for all employers to pay “above-market” wages.**

6. Financial analysts often appeal to “herd behavior” to explain price movements in financial markets: Investors want to buy stocks that have been increasing in price, and sell stocks that have been decreasing in price.

True, False, and Explain: **According to Thaler (*The Winner’s Curse*), herd behavior is not, on average, a profitable strategy for individual investors.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Suppose a pirate robs ten people and puts all of their money inside a treasure chest. When the police recover the chest (and before the pirate can spend a penny), they ask each of the ten victims to state how much money he lost. To discourage lying, the police announce that if the total losses claimed by the victims exceeds the total amount of money in the chest, none of the victims will get any money back. Using everything you've learned, what would *actually* happen in this scenario? Justify your answer.

2. "Both the human capital and signaling models of education suggest that online education will expand more quickly if 'early-adopters' of online education are relatively strong students." Do you agree? Carefully explain your reasoning.

3. Combine (a) a bias from Kahneman (*Thinking, Fast and Slow*) that was NOT discussed in class with (b) the Median Voter Theorem to explain a specific long-standing inefficient public policy.

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2016

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. In a world with no externalities, suppose the government imposes a lump sum tax and uses it to fund an hourly work subsidy.

True, False, and Explain: **The deadweight cost of this tax-and-subsidy policy is zero.**

2. Suppose a market has free entry, positive fixed costs, and constant marginal costs.

True, False, and Explain: **Cournot competition leads to a first-best efficient outcome.**

3. True, False, and Explain: **In the real world, risk misperceptions unambiguously reduce the demand for insurance.**

4. “As in the judgment of whether a work of art is genuine or a fake, you will usually do better by focusing on its provenance than by looking at the piece itself.” (Kahneman, *Thinking, Fast and Slow*)

True, False, and Explain: **Kahneman is arguing that elite credentials are the best predictor of expert accuracy.**

5. Suppose workers are paid nominally rigid efficiency wages.

True, False, and Explain: **Employee shirking will be procyclical – i.e., higher during good economic times, lower during bad economic times.**

6. True, False, and Explain: **Median Voter equilibria are automatically Kaldor-Hicks efficient because they give voters what they most prefer.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. "Moral hazard is at least second-best efficient because there's really nothing government can do to fix it." Using everything you've learned, critically analyze this statement.

2. How will you revise your long-term financial plans in light of the evidence from behavioral finance? Methodically explain your answer.

3. Name a specific market where government could increase efficiency *in theory* even though government reduces efficiency *in practice*. Use Caplan (“Systematically Biased Beliefs About Economics” and “What Makes People Think Like Economists?”) to explain this perverse policy-making. Justify both parts of your response.

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2017

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Suppose one bridge connects an island to the mainland. A bridge has a fixed cost but zero MC (including zero MC of congestion).

True, False, and Explain: **As long as it is profitable, building a second bridge will enhance both productive and allocative efficiency.**

2. Suppose 10 firms engage in Bertrand collusion. They use trigger strategies to achieve the monopoly outcome.

True, False, and Explain: **Each firm's defection profits equal the TOTAL monopoly profits, regardless of the discount rate or number of firms.**

3. Consider a risk-neutral farmer with the cost function $TC=q^5$. The market price is 4 with $p=.5$, and 0 with $p=.5$.

True, False, and Explain: **If the farmer has RE, he sets $q=1$. If the farmer's beliefs do not satisfy RE (he thinks the price=4 with $p=.8$), his profits fall by 50%.**

4. True, False, and Explain: **Caplan (“Systematically Biased Beliefs About Economics”) concludes that the public systematically underestimates the economic costs of taxation.**

5. Suppose an economist argues for wage subsidies financed by lump-sum taxes.

True, False, and Explain: **This reduces efficiency under perfect competition, but may increase efficiency if employers pay efficiency wages.**

6. Suppose you – and you alone – discover that the stock market is mean-reverting.

True, False, and Explain: **If you are rational, you will NOT obey the permanent income hypothesis.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. In the real world, why do human beings so often cooperate in finitely-repeated Prisoners' Dilemmas? Use everything you've learned to craft a thoughtful response.

2. Use one chapter in Kahneman's *Thinking, Fast and Slow* to persuasively argue in favor of a specific free-market reform. How would a clever pro-government economist who *rejects* behavioral economics respond?

3. Caplan argues that the evidence for self-control problems is much weaker than it appears. Explain and critically evaluate his argument.

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2018

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Suppose the government imposes a tax on air pollution.

True, False, and Explain: **Such a tax is ALWAYS a Kaldor-Hicks improvement, and is CONCEIVABLY a Pareto improvement.**

2. Suppose all firms in an industry have the same cost function $TC=a+bq$.

True, False, and Explain: **Contestable monopoly and Bertrand competition both lead to allocative efficiency if $a=0$, allocative inefficiency if $a>0$, and productive efficiency regardless of the value of a .**

3. "To induce the agent to work hard, we will have to give up some of the efficiency that is obtained by putting all the risk on the principal. The question is, How can we do this as efficiently as possible?" (Kreps, *A Course in Microeconomic Theory*, pp.578-585)

True, False, and Explain: **Given the participation constraint and the incentive constraint, Kreps concludes that a profit-maximizing employer will treat a risk-averse worker as if he were risk-neutral.**

4. True, False, and Explain: **All else equal, the private return to education rises when low-education wages go down, tuition goes down, retirement age rises, or graduation probability rises.**

5. Suppose the price of gas is 100% above its long-run historic average.

True, False, and Explain: **Thaler would appeal to long-shot bias to advise you to bet AGAINST a large fall in the price of gas.**

6. Suppose the president's utility equals $\sqrt{s} - pDs$, where s =the total number of scandalous actions he performs, p equals the probability he is punished for any given scandal, and D equals the punishment per detected scandal. Scandals are discrete; you can have 0 or 5 scandals, but not 1.7 scandals.

True, False, and Explain: **If $p=.01$, the president will choose to have at least 1 scandal.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Modern college students spend less than 30 hours a week on academics, but college degrees pay very well. Argue that this is credible evidence that students are colluding with their classmates so they can earn high grades for low effort. Then persuasively critique your own argument.

2. "I just can't stop smoking." "I just can't lose weight." How would a typical behavioral economist interpret these statements? How would Caplan? Who's right – and why?

3. What Magee, Brock, and Young call "optimal obfuscation" is still more difficult to reconcile with rational voters. They claim that rent-seeking insiders amplify the severity of political failures by using "roundabout, circuitous, oblique, and labyrinthine" redistributive methods such as non-tariff barriers. With rational voters, it is hard to see how this could happen at all, since it is not even in the interest of individual rent-seekers. As Breton and Wintrobe (1982) emphasize, when asymmetric information gets worse, public demand for government action goes down, not up. If insiders make it impossible for voters to tell good programs from bad, rational voters' strategic response is "when in doubt, vote no." (Caplan, "Rational Irrationality and the Microfoundations of Political Failure")

Clearly and accurately explain this passage so a non-economist could understand it.

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2019

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Suppose the government imposes a toll on rush-hour driving.

True, False, and Explain: Such a tax may be a Kaldor-Hicks improvement, but cannot possibly be a Pareto improvement because drivers lose money.

2. Suppose two players repeat the following normal form. Both have $\beta=.99$.

	Left	Right
Left	5,5	2,7
Right	7,2	0,0

True, False, and Explain: If the game is infinitely repeated, there is a trigger strategy where players play (Left, Left) forever. If the game is finitely repeated, however, the players can maintain (Left, Left) for at least PART of the game.

3. **True, False, and Explain: Legalizing penalty clauses would reduce moral hazard problems but also reduce efficiency by discouraging the use of insurance.**

4. "I just can't stop drinking." "I just can't stop gambling."

True, False, and Explain: **Economists must appeal to self-control problems to explain why people say things like this.**

5. Many observers claim that educational stratification is increasing; the well-educated are increasingly likely to marry one another.

True, False, and Explain: **This raises education's private return, with no clear effect on its social return.**

6. "Do all changes in wealth produce a similar short-term change in consumption? The mental accounting prediction for the MPC out of windfall gains depends on the size of the gains." (Thaler, *The Winner's Curse*)

True, False, and Explain: **Thaler is trying to explain why richer people save a higher percentage of their income, but he fails to consider the possibility that richer people simply have lower discount rates.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. "Predation in rapidly-evolving high-tech industries is especially unlikely." Carefully explain (a) the conditions under which predation is most likely to succeed, and (b) why these conditions are unlikely to hold in high-tech industries.

2. "*Elected politicians* face almost the same financial incentives as natural monopolies with a maximum (and guaranteed) rate of return of zero. Voters who view politicians as selfless public servants refuse to tie their pay to their performance; government pay scales reflect this belief." (Caplan, "Rational Irrationality and the Microfoundations of Political Failure")

Pick one category of elected politician. Carefully describe how you could make them adopt more efficient policies by changing their financial incentives. Be specific and practical!

3. Pick a specific view that many economists hold that *you* consider absurd. Then use Kahneman to explain why such smart people are making such a gross error. Give details!

Name: _____

Economics 812 Final
Prof. Bryan Caplan
Spring, 2021

Instructions:

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. True, False, and Explain: **Prices in betting markets are determined by agents' preferences and endowments, not objective probabilities. However, if some people have more accurate beliefs than others, then over time, prices become more and more likely to reflect objective probabilities.**

2. Suppose that two players play the following game twice.

	Left	Right
Left	1,5	0,0
Right	0,0	5,1

True, False, and Explain: **What Kreps calls "cheap talk" cannot improve the efficiency of this game *if* both players engage in backwards induction.**

3. True, False, and Explain: **Predatory pricing in rapidly-changing industries is especially unlikely.**

4. True, False, and Explain: **Legalizing penalty clauses would reduce moral hazard problems but also reduce efficiency by discouraging the use of insurance.**

5. “Harvard students have a 97% graduation rate. So if the signaling model were correct, students would be able to use their Harvard *admission* letter to get a well-paid job straight out of high school.”

True, False, and Explain: **This argument ignores the adverse selection problem.**

9. True, False, and Explain: **If the efficient markets hypothesis is correct, then the marginal private cost of irrational investing can easily be zero.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Governments frequently offer government services “for free” – i.e., the price they charge individuals for consuming the services equals \$0. Discuss two different circumstances where this practice would *not* be Kaldor-Hicks inefficient. Roughly what share of actual government services fall in either of your two categories?

2. Suppose a government imposes congestion tolls on highways to reduce rush hour traffic. Will this policy be more or less effective if agents deviate from the standard neoclassical model? Carefully explain your answer, and consider at least one counter-argument.

3. Caplan argues that systematically biased beliefs about economics lead to inefficient policies. Part of the motivation for his survey of intelligence research is his view that public opinion has systematically biased views about the causal effect of intelligence. In a democracy, what *consequences* of this bias might Caplan predict for education policy? How would Wittman respond? Who is right?

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. In a world with no externalities, suppose the government imposes a lump sum tax and uses it to fund an hourly work subsidy.

True, False, and Explain: **This tax-and-subsidy policy will be Kaldor-Hicks efficient unless labor supply elasticity is zero.**

2. Two players are deciding whether to contribute to a public good. The public good is discrete: it is produced at the optimal level so long as one person contributes. If the public good is produced, everyone gets a benefit of 3 if they didn't contribute, and 2 if they did. If no one contributes, everyone gets 0.

True, False, and Explain: **This is a Hawk-Dove game, not a Prisoners' Dilemma.**

3. Suppose workers are paid nominally rigid efficiency wages.

True, False, and Explain: **Employee shirking will be contracyclical – i.e., lower during good economic times, higher during bad economic times.**

4. Suppose economic literacy causes individuals' income, income growth, and job security to rise.

True, False, and Explain: **After controlling for self-serving bias, the absolute value of Caplan's estimates ("Systematically Biased Beliefs About Economics") of the effect of economic training on economic beliefs will be downwardly biased.**

5. Suppose the Norwegian government suddenly decides to privatize its oil fields.

True, False, and Explain: **If Norwegian voters suffer from debt aversion, we should expect their government's spending to increase.**

6. True, False, and Explain: **In the real world, Median Voter equilibria are automatically Kaldor-Hicks efficient because they give voters what they most prefer.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. “Both Wittman and Caplan would expect political betting markets to be unbiased.”

Is this statement correct? If so, how could two economists with such different perspectives on democracy converge on exactly the same conclusion? If not, what is the correct way to describe their contrasting perspectives on political betting markets?

2. Compare and contrast the standard version of prospect theory with the “four-fold” version. Exactly what problems with the standard version does the four-fold version purport to solve? How successful does this attempted solution seem to you?

3. Paul Krugman has accused anti-Keynesians of being “knaves and fools.” What would Kahneman say about this accusation? Use *Thinking, Fast and Slow* to craft a thoughtful reply.

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. Suppose that two players play the following game.

	Left	Right
Left	0,0	4,2
Right	x,4	0,0

For Type A players, $x=6$; for Type B players, $x=2$. Players know both their own type and their opponent's type.

True, False, and Explain: **Either way, there are three NE – two PSNE and one MSNE. But if Player 1 is Type A, a PSNE is focal, and if Player 1 is Type B, a MSNE is focal.**

2. Suppose you have a 2-player version of the voluntary donation game from the notes, with one difference: Each agent cares somewhat about the other, so player one maximizes $U_1=c_1D+.4*c_2D$, and player two maximizes $U_2=c_2D+.4*c_1D$.

True, False, and Explain: **In symmetric Nash equilibrium, $c_1=c_2>.5$.**

3. True, False, and Explain: **Legalizing penalty clauses would reduce moral hazard problems but also reduce efficiency by discouraging the use of insurance.**

4. Caplan argues that most alleged “self-control problems” actually reflect Social Desirability Bias.

True, False, and Explain: **This implies that individuals have dynamically inconsistent preferences. They want to overdrink, overeat, and undersave in the present, but also have a long-run desire to drink, eat, and save prudently.**

5. Remember: In economic terms, a “shortage” means that *people are unable to buy as much of a product as they desire at the existing market price.*

True, False, and Explain: **“Supply chain disruptions” since Covid cannot explain ongoing shortages, but nominal fairness norms can.**

6. “While the behavior of the young could plausibly be explained by capital market imperfections, the behavior of the elderly is more puzzling, especially for homeowners.” (Thaler, *The Winner’s Curse*)

True, False, and Explain: **Thaler is trying to explain why the young save so little, and the elderly save so much.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. In the United States, government offers K-12 education for free, but about 10% of all students are in private school. Is free public education “predation” on private education? What does the continued survival of private education show about the efficacy of predatory pricing?

2. What is the simplest way to determine if IQ tests are culturally biased? Why does this matter for estimates of the return to education? Does this have anything to do with school completion probability?

3. "Given these assumptions, the conclusion that there is too much pork is unassailable. But are these assumptions legitimate? It might be possible to give continuing credit to the congressman for not passing pork during each election period. Or voters could give continuing credit for an act that took place in the past or be antagonistic to the party for continuing pork barrel policies. While it is harder to assign credit when there are multiple inputs, it is not clear why voters would under- rather than overestimate their congressman's marginal contribution to getting rid of pork altogether." (Wittman, "Why Democracies Produce Efficient Results")

Suppose voters suddenly realized that Caplan was right about educational signaling. Precisely how would Wittman predict that Congress would respond – and why? Give details on the ensuing legislative process.

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Part 1: True, False, and Explain**(10 points each - 2 for the right answer, and 8 for the explanation)**

State whether each of the following six propositions is true or false. Using 2-3 sentences AND/OR equations, explain your answer.

1. True, False, and Explain: **If a state of affairs is Pareto efficient, then deadweight costs must be zero.**

2. "If your rival(s) suspect that you are not rational, or even if they suspect that you suspect that they suspect that you aren't rational, then the 'rational' actions for you can be quite different than if you ignore this possibility." (Kreps, *A Course in Microeconomic Theory*)

True, False, and Explain: **This point explains why threatening to fail students for leaving early could work in the real world.**

3. During Covid, many labor markets exhibited persistent labor shortages.

True, False, and Explain: **Both the efficiency wage model and the nominal rigidities model can explain such shortages.**

4. Senior #1 and Senior #2 are both undergraduates in their final year of college. Senior #1 knows he has a 90% chance of successfully graduating this year. Senior #2 knows he has a 90% chance of failing out. Both students satisfy the Permanent Income Hypothesis.

True, False, and Explain: **Both students will increase their consumption if they successfully graduate, but Senior #1 will increase his post-graduation consumption by a smaller fraction than Senior #2.**

5. Imagine that cars are worth X to their current owners, with X uniformly distributed on the interval $[0,100]$. These cars are however worth $b \cdot X$ to buyers, where $b \geq 0$. There is asymmetric information: current owners know their cars' true value, while buyers know only average values.

True, False, and Explain: **Market efficiency continuously rises as b increases.**

6. True, False, and Explain: **Both Wittman and Caplan would expect political betting markets to be unbiased.**

Part 2: Short Answer
(20 points each)

In 4-6 sentences AND/OR equations, answer each of the following three questions.

1. Make the efficiency case for raising ALL government revenue with taxes on negative externalities. What is the best efficiency case *against* this policy? In the real world, what is the best explanation for why governments raise so little revenue from taxes on negative externalities?

2. How might Kahneman (*Thinking Fast and Slow*) rationalize the non-enforcement of penalty clauses? Be specific! Assuming Kahneman's rationalization is correct, what is the most efficient policy all things considered: a full ban on penalty clauses, the status quo, enforcement of "reasonable" penalty clauses, or enforcement of ALL penalty clauses? Justify your conclusion.

3. How would Donald Wittman explain the fact that the U.S. keeps running large deficits, even during periods of full employment, despite the rapidly aging population? Make the most compelling argument you can from a consistently Wittmanian perspective.