

Harvard Pre-Collegiate Economics Challenge

April 4th, 2015

Individual Round

Instructions: Please print your name and school on the answer sheet, which is on the reverse of this page. Ambiguous answers will be marked wrong. Only the answers on the answer sheet will be scored. You have 90 minutes to complete this round. There are 60 multiple choice questions, with the correct answer being one and only one of the letters A, B, C, and D.

Each...	Will Receive...
Correct Answer	One (1) point
Blank Answer	0.25 points
Incorrect Answer	Zero (0) points

You may mark, annotate, disassemble, or otherwise use the test in any way. All questions assume *ceteris paribus* (all other things being equal or held constant).

Answer Sheet

Name:

School:

For each question, clearly circle the letter for your answer if you choose to answer it. As a reminder, the correct answer will be one and only one of the letters A, B, C, or D for each question.

1 A B C D	21 A B C D	41 A B C D
2 A B C D	22 A B C D	42 A B C D
3 A B C D	23 A B C D	43 A B C D
4 A B C D	24 A B C D	44 A B C D
5 A B C D	25 A B C D	45 A B C D
6 A B C D	26 A B C D	46 A B C D
7 A B C D	27 A B C D	47 A B C D
8 A B C D	28 A B C D	48 A B C D
9 A B C D	29 A B C D	49 A B C D
10 A B C D	30 A B C D	50 A B C D
11 A B C D	31 A B C D	51 A B C D
12 A B C D	32 A B C D	52 A B C D
13 A B C D	33 A B C D	53 A B C D
14 A B C D	34 A B C D	54 A B C D
15 A B C D	35 A B C D	55 A B C D
16 A B C D	36 A B C D	56 A B C D
17 A B C D	37 A B C D	57 A B C D
18 A B C D	38 A B C D	58 A B C D
19 A B C D	39 A B C D	59 A B C D
20 A B C D	40 A B C D	60 A B C D

Part I: Questions 1-20

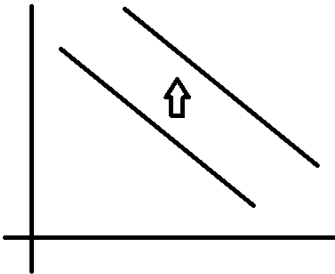
(1) -- If the increase in the price of one good increases the demand for another, then the two goods are

- A. inferior goods
- B. complementary goods
- C. substitute goods
- D. normal goods

(2) -- If nominal gross domestic product grew by 12 percent and real gross domestic product grew by 6 percent, inflation this year would be

- A. 6%
- B. 18%
- C. -5%
- D. -7%

(3) -- See figure below



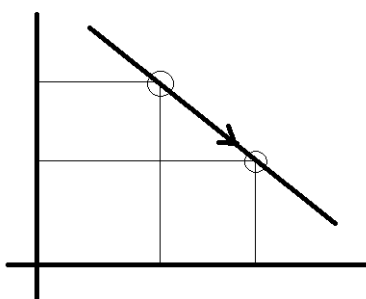
Which of the following policies or changes could produce the above change in the demand curve for soda (see figure)? The y-axis is price and x-axis is quantity.

- A. an increase in taxes or a decrease in subsidies on soda
- B. a decrease in taxes or an increase in subsidies on soda
- C. a decreased number of buyers of soda
- D. an increased preference among the general public for soda

(4) -- Outward shifts in the production possibilities frontier can be caused by an increase in:

- A. the labor force
- B. unemployment
- C. inflation
- D. demand

(5) -- See figure below



Which of the following policies or changes could produce the above change in the demand curve for gasoline (see figure)? The y-axis is price and x-axis is quantity.

- A. an increase in taxes on gasoline
- B. a decrease in people's income
- C. a decrease in taxes on gasoline
- D. an increase in people's income

(6) -- The real value of the US dollar is determined by

- A. the marginal propensity to consume
- B. the money multiplier
- C. the goods and services it will buy
- D. the value of the gold backing the dollar

(7) -- Of the following choices, which correctly describes the marginal cost of providing a pure public good to one more consumer?

- A. It is equal to zero
- B. It is equal to the original cost of the good
- C. It decreases as the number of consumers increases
- D. It increases as the number of consumers increases

(8) -- Consumption is defined as spending by households on goods and services with the exception of purchases of:

- A. automobiles
- B. new housing
- C. luxury goods
- D. medical services

(9) -- If \$150 in excess reserves generates a maximum expansion of the money supply of \$750, what is the reserve requirement?

- A. 5%
- B. 10%
- C. 12.5%
- D. 20%

(10) -- Which of the following describes the shift in labor force participation for men and women, respectively, since 1950?

- A. Increase, Increase
- B. Increase, Decrease
- C. Decrease, Increase
- D. Decrease, Decrease

(11) -- An owner of a truck in the perfectly competitive market of delivery service:

- A. can make a greater profit than others in the long term if he buys a new truck
- B. can make a greater profit than others in the long term if he works longer hours
- C. cannot make a greater profit than others in the long term
- D. none of the above

(12) -- Which of the following would cause increases in inflation and unemployment?

- A. Increase in inflationary expectations
- B. Increase in the overall level of productivity
- C. Decrease in velocity of money
- D. Decrease in the money supply

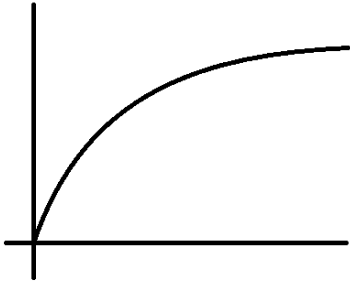
(13) -- Assume that peanut butter is an inferior good. Which of the following statements describes what is meant by an "inferior good" in economics?

- A. Because peanut butter is a low-quality food, consumers will not buy it.
- B. When the supply of peanut butter falls, its price falls.
- C. When consumer incomes increase, the demand for peanut butter decreases.
- D. If the price of almond butter, a substitute, rises, the demand for peanut butter will fall.

(14) -- Which of the following would likely increase if the public decides to increase its holdings of currency?

- A. The price level
- B. The reserve requirement
- C. The interest rate
- D. Employment

(15) -- See figure below



Let the curve above be a graph for Jason's utility and wealth, with wealth on the x-axis and utility on the y-axis. Which of the following best describes his risk preference?

- A. Jason is risk-loving/risk-seeking
- B. Jason is risk-neutral
- C. Jason is risk-averse/risk-avoiding
- D. Jason has no attitude toward risk

(16) -- Which of the following is not a component of M1 money supply?

- A. Demand deposits
- B. Small time deposits
- C. Traveler's checks
- D. Coins in circulation

(17) -- Calculate the unemployment rate based on the following:

Population	30,000
Proportion of population that is of working age	0.75
Labor force participation rate	0.8
Proportion of working-age population that are "discouraged workers"	0.02
Officially unemployed	900

- A. 9%
- B. 7%
- C. 5%
- D. 3%

(18) -- Gold and silver are both forms of:

- A. liquid money
- B. fiat money
- C. commodity money
- D. none of the above

(19) -- Under a fractional reserve banking system, banks are required to

- A. Insure deposits against losses and bank runs
- B. Expand money supply when requested by the central bank
- C. Pay part of their interest income in taxes
- D. Keep part of their demand deposits as reserves

(20) -- In a certain economy that only produces cars, each car sells for \$50. If the velocity of money is 10 and the quantity of money is \$2000, how many cars are produced each year?

- A. 100
- B. 200
- C. 400
- D. 500

Part II: Questions 21-40

(21) If a government imposes an effective price ceiling, which of the following will occur?

- A. There will be a shortage in the market
- B. There will not necessarily be a change in the market
- C. The new price will be lower than equilibrium
- D. The new price will be the same as equilibrium

(22) -- Which of the following groups of people would be considered unemployed in the United States?

- A. A father who quit his job to take care of his children
- B. Someone who has given up on searching for a job
- C. Someone who was fired from their job and is now actively searching for a new job
- D. All of the above

(23) -- If market failures exist, which of the following is true?

- A. Government intervention in economic activities will not improve on market outcomes.
- B. The marginal benefits of production are greater than marginal costs, regardless of price.
- C. The equilibrium price and quantity determined by markets are not socially optimal.
- D. More public goods are produced than private goods.

(24) -- The supply of gasoline changes, causing the price of gasoline to change. The resulting movement from one point to another along the demand curve for gasoline is called

- A. a change in demand.
- B. a change in quantity demanded.
- C. a change in quantity supplied.
- D. a change in average variable cost.

(25) -- A company sells its product in a perfectly competitive market for a price of \$20 per unit and hires workers at a daily wage of \$100. Labor is the only cost, and the firm is currently earning profits. If the company hires one more worker and output increases by 5 units per day, the firm's profits will:

- A. decrease by \$20
- B. decrease by \$100
- C. increase by \$100
- D. remain unchanged

(26) -- Published by The Economist, the Big Mac Index serves best as a measure for which of the following?

- A. Purchasing-power parity
- B. Real GDP Growth rate
- C. Nominal interest rate
- D. Standardized rate of globalization

(27) -- Assume that hot dogs and hamburgers are substitutes. If the price of hamburger increased, the demand curve for hot dogs would

- A. shift to the right and the cross elasticity would be positive.
- B. shift to the right and the cross elasticity would be negative.
- C. remain unaffected (this would result in a movement along the demand curve for hot dogs) and the cross elasticity would remain unaffected also.
- D. shift to the left and the cross elasticity would be negative.

(28) -- Consider two equally risky bonds both of which have a face value of \$1000 and a coupon rate of 10%. Interest rates are expected to remain at 12% for at least the next 2 years. One bond matures in one year, and the other bond matures in 2 years. Which of the following is true?

- A. The price of both bonds must be equal
- B. The price of the 1-year bond must be greater than the price of the 2-year bond
- C. The price of the 2-year bond must be greater than the price of the 1-year bond
- D. The 1-year bond will sell for more than its face value

(29) -- National data for a closed economy with no international trade show the following:

Consumption: \$10 billion

Investment: \$4 billion

Government Spending: \$6 billion

Taxes: \$5 billion

Based on this information, national savings for this economy is:

- A. \$1 billion
- B. \$4 billion
- C. \$6 billion
- D. \$5 billion

(30) -- The success of diversification in minimizing risk is dependent on _____, because _____:

- A. Adverse selection; riskier investors create arbitrage opportunities for those seeking to minimize risk.
- B. The efficient market hypothesis; arbitrage opportunities make it extremely difficult to minimize risk.
- C. Financial intermediation; banks are better at finding arbitrage opportunities for its customers.
- D. Correlation of returns; investors can often find different assets whose returns are not perfectly, positively correlated.

(31) -- The exchange rate between the US dollar and Canadian dollar changes from US\$1 = Canadian\$1.1 to US\$1 = Canadian \$1.3. This will have what impact?

- A. Canadians will import more goods from the US
- B. The trade balance will be unaffected
- C. US goods will be more expensive for Canadians
- D. Canadian goods will be more expensive for Americans

(32) -- Victoria buys a packet of tomato seeds from her local garden store. She grows the tomatoes and consumes them at home. The packet of seeds ____ in GDP; the tomatoes she consumes ____ in GDP.

- A. Does not count; do not count
- B. Counts; counts
- C. Does not count; counts
- D. Counts; do not count

(33) -- The highest inflation rate in the U.S since 2000 was:

- A. 2.97%
- B. 3.73%
- C. 3.99%
- D. 4.28%

(34) -- According to the Taylor principle, how should the central bank respond to a 2% increase in inflation?

- A. Leave nominal interest rates constant
- B. Increase nominal interest rates by 1%
- C. Increase nominal interest rates by 2%
- D. Increase nominal interest rates by >2%

(35) -- When does the indifference curve look like an L-shape (right angles)?

- A. When the goods are perfect substitutes

- B. When the goods are perfect complements
- C. When there is only one good
- D. When there are three goods

(36) -- Like tariffs, quotas tend to lead to:

- A. higher prices and reduced imports.
- B. increased government revenue.
- C. increased consumer surplus.
- D. All of the above.

(37) -- A decrease in net foreign investment coincides with:

- A. a decrease in the real interest rate and a decrease in the real exchange rate
- B. a decrease in the real interest rate and an increase in the real exchange rate
- C. an increase in the real interest rate and a decrease in the real exchange rate
- D. an increase in the real interest rate and an increase in the real exchange rate

(38) -- If country A forms a customs union with country B, then which of the following is true?

- A. Country B continues to get tariff revenue from country A's exports sent to country B
- B. all new trade between A and B because of the union is known as "trade creation"
- C. the welfare of A and B must necessarily be enhanced, especially if A and B begin to buy many items from each other that they used to buy from the "outside world"
- D. A and B may especially benefit from the union if substantial economies of scale exist in some of the A and B industries

(39) -- What does a higher Gini coefficient of 1 mean?

- A. Imperfect equality
- B. Imperfect inequality
- C. Perfect equality
- D. Perfect inequality

(40) -- Which one of the following sets of countries contains only members of the European Union (EU)?

- A. France, Spain, Switzerland, UK
- B. Germany, Italy, Portugal, Sweden
- C. Denmark, Greece, the Netherlands, Poland
- D. Belgium, Greece, Italy, Portugal

Part III: Questions 41-60

(41) -- How does technological progress typically impact the labor market?

- A. Increase labor supply curve

- B. Decrease labor supply curve
- C. Increase labor demand curve
- D. Decrease labor demand curve

(42) -- Which of the following was NOT a feature of Mortgage Backed Securities (MBS) sold during the lead-up to the 2008 Financial Crisis?

- A. Allowed mortgage owners to maintain personal relationships with banks
- B. Geographic diversification of mortgages
- C. Risk minimization through bundling mortgages with negative correlation
- D. Often contained subprime mortgages

(43) -- The crowding-out effect refers to the offset in aggregate demand that results when:

- A. contractionary fiscal policy lowers the interest rate and reduces investment
- B. expansionary fiscal policy lowers the interest rate and increases investment
- C. expansionary fiscal policy raises the interest rate and reduces investment
- D. expansionary fiscal policy raises the interest rate and increases investment

(44) -- Which of the following is an example of a regressive tax system?

- A. Wealthier individual pays \$5,000 in taxes and poorer individual pays \$10,000
- B. Wealthier individual pays \$10,000 in taxes and poorer individual pays \$10,000
- C. Wealthier individual pays 10% of income in taxes and poorer individual also pays 10% of income
- D. Wealthier individual pays 20% of income in taxes and poorer individual pays 10% of income

(45) -- When interest rates are close to 0%,

- A. Both monetary policy and fiscal policy are very effective
- B. Both monetary policy and fiscal policy are very ineffective
- C. Monetary policy is very effective, while fiscal policy is very ineffective
- D. Monetary policy is very ineffective, while fiscal policy is very effective

(46) -- A natural monopoly is:

- A. rival and excludable
- B. rival but not excludable
- C. not rival but excludable
- D. neither rival nor excludable

(47) -- What is Nash equilibrium?

- A. The solution to a game wherein each player cooperates with the other to make the maximum possible individual profits
- B. The solution to a game wherein one player makes all profit and the other makes none
- C. The solution to a game wherein both players make zero profit
- D. The solution to a game wherein both players do not have anything to gain by further cheating

(48) -- How are the marginal revenue and demand curves related in a monopoly firm?

- A. The two curves are identical
- B. The slope of the marginal revenue curve is double that of the demand curve
- C. The slope of the demand curve is double that of the marginal revenue curve
- D. None of the above

(49) -- When a Norwegian citizen works temporarily in the Canada, his production is considered part of:

- A. Canada's GDP and Norway's GNP
- B. Canada's GNP and Norway's GDP
- C. Only Canada's GDP
- D. Only Norway's GNP

(50) -- An example of a transfer payment is:

- A. when the government pays the salary of a public school teacher
- B. when funds are transferred from the government to a private consumer
- C. when funds are transferred from the government to a government worker
- D. when the government pays a Social Security benefit to an elderly person

(51) -- Which of the following was not an American antitrust act passed in the 1900s?

- A. Clayton Antitrust Act
- B. Robinson-Patman Act
- C. Sherman Antitrust Act
- D. Celler-Kefauver Act

(52) -- Quantity of labor in a monopsony is _____ quantity of labor in a perfectly competitive labor market, while wages in a monopsony are _____ wages in a perfectly competitive labor market.

- A. Less than, less than
- B. Greater than, greater than
- C. Less than, greater than
- D. Greater than, less than

(53) -- Which of the following causes the aggregate demand curve to slope downwards?

- A. Income effect
- B. Substitution effect between goods as prices change
- C. Decreasing marginal utility
- D. The impact of price change on wealth

(54) -- How does the Fed alter the quantity of reserves in the economy?

- A. buying bonds in open-market operations
- B. selling bonds in open-market operations
- C. making loans to banks
- D. all of the above

(55) -- If an economy has had the following values of nominal GDP and GDP deflation, what was the rate of growth of real GDP between 2009 and 2010?

Nominal GDP 2012	2800
Nominal GDP 2013	3360
GDP deflator 2012	112
GDP deflator 2013	120

- A. about 7 percent
- B. about 10 percent
- C. about 12 percent
- D. about 20 percent

(56) -- In the United States, which body is considered the ruling authority on defining recessions?

- A. The Treasury Department
- B. The National Bureau of Economic Research
- C. The Federal Reserve
- D. Congress

(57) -- Which of the following is the correct formula for the multiplier of fiscal policy, also known as the government spending multiplier? MPC refers to the marginal propensity to consume.

- A. $1/(1+MPC)$
- B. $1/(1-MPC)$
- C. $1+MPC$
- D. $1-MPC$

(58) -- Which of the following is NOT an advantage of monetary policy over fiscal policy?

- A. No crowding out effect
- B. No political or internal lags
- C. May be conducted in small increments
- D. Effective at the Zero Lower Bound

(59) -- Which region of the United States experienced a real estate boom in the 1920's, often considered a historical analogy to the housing boom between 2004 and 2007?

- A. The Southwestern Sun Belt
- B. Northern California
- C. Southern Florida
- D. Oklahoman Oil Belt

(60) -- Unanticipated deflation would:

- A. Hurt savers and hurt lenders
- B. Benefit savers and hurt lenders
- C. Benefit savers and benefit lenders
- D. Hurt savers and benefit lenders