

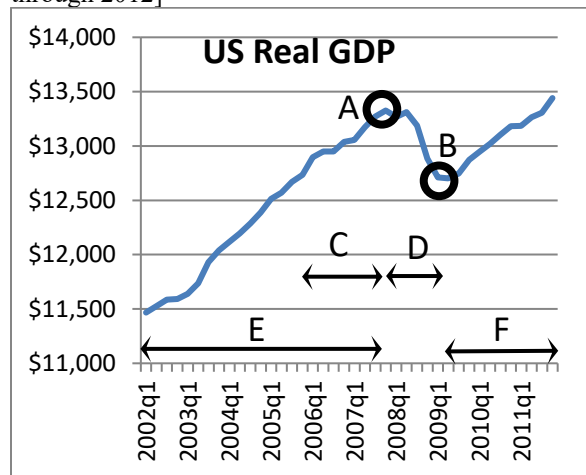
EXAMINATION 2 VERSION B
“Measuring the Economy”
March 10, 2026

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Cell phones or other wireless devices are NOT permitted. Point values for each question are noted in brackets. Points will be subtracted for illegible writing or incorrect rounding. Maximum total points are 100.

I. Multiple choice: Circle the one best answer to each question. Please use the margins for scratch work.
[1 pt each, 15 pts total]

- (1) Which of the following shows a strong upward trend for the U.S. over the last century?
- The inflation rate.
 - The interest rate.
 - The unemployment rate.
 - Real GDP per capita.

The next two questions refer to the following graph, which shows a U.S. business cycle from 2002 through 2012]



- (2) A *recession* is marked in the graph above by the letter
- A.
 - B.
 - C.
 - D.
 - E.
 - F.

- (3) A *trough* is marked in the graph above by the letter
- A.
 - B.
 - C.
 - D.
 - E.
 - F.

- (4) At the trough of a business cycle, which is greater?
- Potential GDP.
 - Actual GDP.
 - Actual GDP and potential GDP are equal.
 - cannot be determined from information given.

- (5) From 1981 to 1986, the rate of inflation (measured by the GDP price index) dropped from 9.4 percent to 2.0 percent. This is an example of
- disinflation.
 - deflation.
 - reflation.
 - hyperinflation.

- (6) Suppose the interest rate on loans is 5 percent and the inflation rate is expected to be 2 percent. Then the real rate of interest is
- negative 3 percent.
 - 2 percent.
 - 3 percent.
 - 5 percent.
 - 7 percent.
 - 10 percent.

- (7) Interest rates and the money supply are components of
- monetary policy.
 - international trade policy.
 - fiscal policy.
 - foreign policy.
- (8) Consumption spending in the national accounts does *not* include
- spending on cell phone service.
 - spending on entertainment.
 - purchases of necessities like food and clothing.
 - spending on medical care.
 - purchases of new homes.
- (9) Investment spending in the national accounts does *not* include purchases of
- new homes.
 - tractor-trailer trucks.
 - telecommunications equipment.
 - certificates of deposit in banks.
 - new factories.
- (10) Government purchases in the national accounts do *not* include
- spending on highway construction.
 - salaries of police and fire personnel.
 - pay for members of the armed services.
 - spending for unemployment benefits.
 - spending for environmental preservation.
- (11) The largest share of national income is
- dividends.
 - rental income.
 - labor income.
 - interest income.
- (12) If a country's investment spending exceeds its national savings, then also its
- government spending exceeds its tax revenues.
 - imports exceed its exports.
 - consumption exceeds its income.
 - unemployed workers exceed job vacancies.
- (13) Real GDP is defined as GDP
- adjusted for inflation.
 - adjusted for statistical errors.
 - divided by population.
 - adjusted for changes in life expectancy.
- (14) Over the last 50 years, the price level has fallen
- very rarely.
 - in about half the years.
 - almost every year.
 - every year
- (15) The exchange rate for euros was 0.68 euros per U.S. dollar in 2008, and 0.78 euros per U.S. dollar in 2012. Clearly, the
- dollar appreciated against the euro.
 - euro appreciated against the dollar.
 - both of the above.
 - none of the above.

II. Problems: Insert your answer to each question in the box provided. Please use the margins and graphs for scratch work. Only the answers in the boxes will be graded. Work carefully—partial credit is not normally given for questions in this section.

(1) [Spending approach to GDP: 16 pts] Consider each of the following items purchased in 2025. Should the item be counted as part of U.S. GDP for 2025—*YES* or *NO*? If *YES*, in which spending component of GDP—consumption (C), investment (I), government purchases (G), or net exports (X)—does it belong? If *NO*, explain why not.

	<i>Part of U.S. GDP for 2025? (YES or NO)</i>	<i>If YES, then which spending component (C, I, G, or X)? If NO, why not?</i>
a. A ton of soybeans grown in Iowa, purchased by a food processor in China.		
b. An original 1884 edition of Mark Twain's <i>Huckleberry Finn</i> , purchased by a collector in Los Angeles.		
c. A tractor-trailer truck, purchased by United Parcel Service.		
d. A new house, purchased by a family in Omaha.		

(2) [Components of GDP: 16 pts] The imaginary country of Concrete Land has just four industries: the Raw Concrete Industry, the Building Construction Industry, the Road Construction Industry, and the Birdbath Industry. There are no other goods and no foreign trade. In a recent year:

- The Raw Concrete Industry produced and sold \$2.5 trillion to the Birdbath Industry, \$1 trillion to the Road Construction Industry, and \$1 trillion of raw concrete to the Building Industry, for a total of \$4.5 trillion in sales.
- The Birdbath Industry produced and sold \$10 trillion of birdbaths to consumers.
- The Road Construction Industry produced \$3 trillion of roads for the government.
- The Building Industry produced and sold \$1 trillion of buildings (a capital good) to each industry (including itself) for a total of \$4 trillion in sales.

a. Compute the spending components of Concrete Land's GDP.

Consumption (C)	\$	trillion
Investment (I)	\$	trillion
Government purchases (G)	\$	trillion
Total GDP (Y)	\$	trillion

b. Compute value added by each industry in Concrete Land.

Raw Concrete Industry	\$	trillion
Building Industry	\$	trillion
Road Construction Industry	\$	trillion
Birdbath Industry	\$	trillion

(3) [GDP, saving, GDP per capita: 6 pts] The table below shows data for the United States in a recent year as reported by the Bureau of Economic Analysis in *trillions*. The U.S. population in that year was **334 million**. [Hint: Some of the data are extraneous and not needed for solving this problem.]

Net exports	-\$1.0
Transfers	\$4.0
Government purchases	\$4.4
Consumption	\$17.5
Personal saving	\$0.6
Investment	\$4.8
Personal taxes	\$3.1

a. Compute GDP.

\$	trillion
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b. Compute national saving (\$).

\$	trillion
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c. Compute GDP per capita to the nearest dollar.

\$	
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(4) [Spending approach to GDP: 12 pts] The table below shows data for the United States in a recent year as reported by the Bureau of Economic Analysis in trillions for a recent year. [Hint: Some of the data are extraneous and not needed for solving this problem.]

Exports	\$2.1
State and local purchases	\$2.5
Compensation of employees	\$11.6
Transfer payments	\$4.2
Consumption of services	\$9.5
Business fixed investment	\$2.9
Residential investment	\$0.9
Consumption of durable goods	\$1.6
Corporate profits	\$2.4
Consumption of nondurable goods	\$3.1
Personal dividend income	\$1.4
Imports	\$2.8
National defense purchases	\$0.9
Federal nondefense purchases	\$0.6
Depreciation (capital consumption of domestic business)	\$2.4
Personal interest income	\$1.5
Change in inventories	\$0.1

a. Compute consumption (C).

\$	trillion
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b. Compute gross investment (I).

\$	trillion
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c. Compute net investment.

\$	trillion
----	----------

d. Compute government purchases (G).

\$	trillion
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e. Does the U.S. have a trade surplus or a trade deficit ?

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f. Compute net exports (X).

\$	trillion
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(5) [Stocks v. flows: 8 pts] Are the following quantities stocks or flows? Write "STOCK" or "FLOW" in each box.

a. The total wealth of people in Iowa on January 1, 2026.

b. The total income of people in Iowa in 2025.

c. The amount of investment spending in the U.S. in 2025.

d. The amount of economic capital in the U.S. on January 1, 2026.

(6) [Value added: 2 pts] Suppose a donut shop pays its employees \$200,000, pays \$50,000 for ingredients, and leases its storefront for \$40,000 per year. Meanwhile it sells \$500,000 of donuts per year. Compute the value added by the donut shop.

\$

(7) [GDP and real GDP: 8 pts] In an imaginary country, only two final goods are produced, as shown in the following table. (You can use the boxes at right for scratch work.)

Year	Food		Clothing		2024 prices	2025 prices
	Price	Quantity	Price	Quantity		
2024	\$5	10	\$4	50		
2025	\$5	16	\$9	50		

a. Compute the growth rate of *nominal GDP* (also called “current-dollar GDP”) from 2024 to 2025.

	%
	%
	%
	%

b. Compute the growth rate of GDP from 2024 to 2025 *in constant 2024 prices*.

c. Compute the growth rate of GDP from 2024 to 2025 *in constant 2025 prices*.

d. Compute the growth rate of *real GDP* from 2024 to 2025, as it would be computed by the U.S. Bureau of Economic Analysis.

(8) [Nominal GDP, real GDP, and inflation: 7 pts] The following table shows data for Chile, in billions of *pesos*, the Chilean currency.

Year	Nominal GDP	Real GDP	GDP price index or price deflator (to the nearest tenth)	Rate of inflation (to the nearest tenth of a percentage point)
1994	179	182		
1995	189	189		%
1996	196	191		%

a. [2 pts] Which is the base year for real GDP?

b. [3 pts] Compute the GDP price index for each year, to the nearest tenth, and insert it in the table above. [Hint: The price index should equal 100.0 in the base year.]

c. [2 pts] Compute the rate of inflation for the last two years, to the nearest tenth of a percentage point, and insert in the table above.

(9) [Using the CPI: 2 pts] Ford Motor Company introduced the Mustang car in 1964 at a price of \$2,368. In that year, the CPI was about 31. The CPI is now about 330. Compute the price of 1964 Mustang in today's dollars, to the nearest whole dollar.

\$

(10) [Using market exchange rate: 2 pts] The exchange rate for Japanese yen is about 158 yen per U.S. dollar. Then a tee shirt that costs 2000 yen will cost how much in U.S. dollars, to the nearest cent?

\$

(11) [PPP exchange rate: 2 pts] Suppose a basket of goods bought by a typical consumer that costs 1000 pesos in Mexico would cost \$65 US dollars in the United States. What is the purchasing-power-parity exchange rate to the nearest hundredth?

Mexican pesos
per US dollar

III. Critical thinking: Write a one-paragraph essay answering *one* question below (your choice). [4 pts]

- (1) Which usually grows faster in a country—real GDP or real GDP per capita? Explain your reasoning.
- (2) Which spending component of GDP is most important for *future* economic growth? Justify your answer.

Circle the question you are answering. Write your answer below. Full credit requires correct economic reasoning, legible writing, good grammar including complete sentences, and accurate spelling.

[end of exam]