MATHMATHICS

SUPPLEMENTAL LESSON, OCTOBER 2005

Name ________________________________ Date ______________

Made in the USA

Read the article "Made in the USA" and use the Internet to help answer the following questions. Here are some possible Web sites: www.econlib.org/index/html, www.bloomberg.com and www.worldbank.org.

1 The article refers to gross domestic product. What is GDP? What is gross national product? How do GDP and GNP differ?

2 What factors go into determining GDP?

3 What is the approximate ratio of the U.S.'s GDP to the next largest economy in the world? What is the ratio of the U.S.'s GDP to the third largest economy?

4 According to the Bureau of Labor Statistics, the number of manufacturing production workers has gone from 12.8 million in 1952 to 10.8 million in 2002—a decline of 2 million in more than 50 years. Yet, the percentage of those working in manufacturing jobs has declined from 26% to 8%. Explain how this statistic is possible.

5 According to the article, manufacturing output in 2004 was 12.7% of GDP. In dollars, how much would that be?

6 What is inflation and how does that affect GDP?

7 If inflation rose at an annual rate of 2.6% during the last three months, what does that tell you about the pace of inflation over that quarter?

8 If the size of the economy, based on its GDP, increased from $11.1 trillion to $11.6 trillion, what would be the percent increase for GDP?

9 The article says "survivors" in our economy tend to be in "capital intensive" industries and that these industries have increased output at a higher rate than industries that produce consumer goods. What is meant by "capital intensive?" What is the ratio of increase in business of "capital intensive" industries to consumer goods industries?

Developed for the Classroom Edition by Ted Kurland, Kempner High School, Sugarland, Texas

Answers

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1 GDP is the dollar value of final goods and services produced within a country's boarders in a year. GDP counts income according to where it is earned (within the U.S.), as opposed to who owns the facility that produces it. U.S. owners producing overseas are not counted. Foreigners producing here are counted. GNP is the value of final goods and services, including profits from foreign capital held abroad, produced by a country's nationals in a year. GNP includes products produced outside the U.S., if the producer is American.

2 The GDP counts consumption + investment + exports – imports. Another way to look at this is: private consumption + government expenditures + investments + net exports.

3 The U.S.'s GDP in 2004 was $11,667,515,000,000. Japan was second with $4,623,398,000,000 in 2004. Rounding each GDP to $12 trillion to $5 trillion becomes 12 to 5 or 2.4 to 1. The third largest economy wass Germany with $2.7 trillion. The ratio is about 12 to 3 or 4 to 1.

4 The percentage of workers in manufacturing jobs is computed by the number of workers in manufacturing divided by the total number of those employed in all non-farm jobs. The population of all non-farm workers increased from 48.9 million to 130.4 million—a 167% increase in all non-farm workers. As that number increases, the percentage of manufacturing production workers decreases.

5 12.7% of the 2004 GDP = .127 x $11,667,515,000,000 = $1,481,774,400,000

6 Inflation is an increase in prices resulting in a decrease in purchasing power. In other words, as prices increase our dollar can purchase less. The GPD is adjusted to inflation every five years. This is done to compare consumption and expenditures with an established benchmark with dollars of equal purchasing power. Without an adjustment for inflation, the GDP appears too large for the actual output of the economy.

7 The monthly inflation is annualized. That is, an average one-month inflation rate is translated into a yearly rate. If the annual rate, 2.6%, is based on a three-month period, then the quarterly rate was 2.6% divided by 4 quarters, or .65% per quarter. This means the monthly rate during that quarter was .65% divided by 3, or .22%. In other words, if each month had .22% inflation then the annual rate would be 12 x .22% = 2.6%.

8 $11.6 trillion – $11.1 trillion = $.5 trillion, (.5/11.6) x 100 = 4.3% decrease

9 "Capital intensive" is production that requires expensive and sophisticated machinery and equipment. This type of industry also usually requires a higher educated work force, which translates into being a "survivor." The ratio of capital intensive output to consumer goods is 2 to 1.