6th Grade Assignment – Week #19

<u>Presentations and Daily Reading</u>:

- For these last two weeks of the main lesson, I would like parents to search for business articles in the news – newspapers, magazines, or something online – and share the ones that are most understandable with your 6th grader. In particular, look for articles that have graphical representation of data, such as a bar graph, pie chart, or (especially) a graph plotting some value versus time.

- For each of the next two Friday tutorial sessions (or during group work meetings, if you don't have a JYMA Friday tutorial session) I would like each student to present one of the articles to the group. In particular, be sure to take a good photo (or scan) of a graph from the article and send it to your JYMA tutor so that she can do a "screen share" and others can see it easily on their screen. You can then talk about the graph.

<u>Individual Work</u>:

- *Main Lesson Book Pages:* There should be more than enough below for the entire week. Remember it is better to do fewer pages with higher quality. Here are some possible ideas for main lesson book pages:
  - Create a main lesson book page about the basics of percents. Include an explanation of what a percent is, and give examples of how to convert percents into fraction and fractions into percents. Also, you can summarize the "Two Key Percent Calculations" (which I will present in Wednesday's lecture).
  - Create a main lesson book page on the "Today's Global Economy". You should integrate terms such as goods, services, GDP (Gross Domestic Product), Exports, Imports, Producers, Consumers, Retailers, Wholesalers, etc.
  - Create a main lesson book page on "America's trading partners" (based on Thursday's group assignment, below.)
  - Create a main lesson book page summarizing any of the articles you have read (see above).

- At some point after your Tuesday group meeting, fill out the rest of the "Fraction-Decimal-Percent Conversion Table" (answers are found in the document "G6 - Group Answers (non-workbook) - Q3").

<u>Group Assignments</u>:

For Tuesday:

- Look at the "Fraction-Decimal-Percent Conversion Table" on the next page, and fill out six of the rows which you might consider to be the most difficult – but not the last one ($^1/_7$). (The rest should be filled out at a later time individually. Answers are found in the document "G6 - Group Answers (non-workbook) - Q3".)

- *Note for the parent*:
  - If possible, it may be best, before the group meeting, for you to read with your child the below points under "Things to know about GDP".
  - The discussion topics (listed further below) are fairly advanced for 6th graders. It will likely require close supervision and some guidance (but as little input as possible) from an adult.

- *Things to know about GDP*:
  - As I said in the lecture, GDP is defined as "the monetary value of all goods and services made within a country" (usually over the period of one year).
  - GDP is a common way to measure the strength and size of a county's economy.
  - The USA has the largest economy in the world, with a GDP of 21.4 trillion dollars. (It's hard to even imagine how much money that is!) The next largest GDP could be considered the European Union (which is a collection of countries), which has a combined GDP of 18.7 trillion dollars. China's GDP (which has increased greatly over the past 20 years) is currently 14.1 trillion dollars. Japan has the next largest GDP at only 5.2 trillion dollars.

- *Questions and Discussion Points*:
  1) Switzerland's GDP is 720 billion dollars (which is 0.72 trillion dollars). Switzerland is considered by many to be the wealthiest country in the world.
     How can this be true when it's GDP is only about 5% of the USA's GDP?

  2) Imagine there is a village which has a total of 20 workers. If each worker earns an annual salary of $50,000, what is the total (combined) annual earnings of the village?

  3) Imagine there is a different village which has a total of 10 workers, and the total (combined) annual earnings of these ten workers is $430,000. What is the average annual salary of the workers in the village? (Note for the parent: the term "average" here is the statistical "mean" – which is probably what you thought before you read this sentence, so you'd likely be better off to not read this!)

  4) With the previous two problems, we could have used GDP instead of salaries, but the idea would have been the same. Using this idea, calculate the average GDP per person for each of the following countries. (This is what economists call "GDP per capita".)
     a) Calculate the per capita GDP of the USA (which has a population of 330 million).
     b) Calculate the per capita GDP of Switzerland (which has a population of 8.8 million).
     c) Calculate the per capita GDP of China (which has a population of 1.44 billion).

  5) Look at the "GDP per Capita" table at the end of this document, and then answer these questions:
     a) What surprises you?
     b) Do you think this is a good way to measure the wealth of countries?
     c) Does this mean that people in the USA are better off than people in France?
     d) In what ways might the people in a lower GDP per capita country be worse off or better off than a country with a high GDP per capita?

For Thursday:

- Notes for the parent:
  - Once again, this assignment may take a significant amount of adult supervision.
  - As always, this assignment is meant to be exploratory. They should just do what they can. My hope is that it helps the students to develop interest in this topic.

Look at the table shown on the next page, and then answer the following questions:

1) What was the total value of all imports into the USA for 2019? (Round to the nearest billion dollars.)

2) Total imports for 2019 were what percent of US GDP?
   Hints:
   - As stated in the last assignment, US GDP for 2019 was about 21 trillion dollars.
   - It is helpful to look at the "Two Key Percent Calculations" that I covered in the lecture.
   - Round your answer to the nearest percentage point.

3) Look at the whole table. What trends do you see? What stands out as remarkable or interesting?

4) Did you notice that all imports dropped between 2008 and 2009? Why do you think this was? (Note to parent: You should explain a bit about how there was a recession in 2008, and talk about what a recession is.)

5) Comparing imports from Japan and China.

   a) Between 2016 and 2017, what amount of increase was there in imports from China? (Round your answer to the nearest billion dollars.)

   b) This amount of increase is what percent of the imports (from China) for 2016?
   Hints:
   - It is helpful to look at the "Two Key Percent Calculations" that I covered in the lecture.
   - To simplify the calculations, round the amount of imports in 2016 to two significant digits, which is therefore 460 billion.
   - Round your answer to two significant digits (e.g., 4.3%).
   - We can then say that in that one year the imports from China increased by that percentage.

   c) Between 2004 and 2019, what amount of increase was there in imports from Japan? (Round your answer to the nearest billion dollars.)

   d) This amount of increase is what percent of the imports (from Japan) for 2004? (Use the same hints as stated in part "b", above) We can then say that the imports from Japan increased by that percentage over the those 14 years.

   e) What do your answers above for parts b and d tell you about the trends for US imports?

   f) Why do you think the imports from China dropped in 2019?

   g) *Challenge!* By what percentage did imports from China decrease in 2019 (as compared to the previous year)? (Hint: The amount of decrease is what percent of where you started?)

Fraction-Decimal-Percent Conversion Table

Normal Fraction	Fraction with Denom=100	Percent	Decimal	Normal Fraction	Fraction with Denom=100	Percent	Decimal
$\frac{1}{2}$	$\frac{50}{100}$	50%	0.5	$\frac{1}{3}$			
$\frac{1}{4}$	$\frac{25}{100}$	25%	0.25	$\frac{2}{3}$			
$\frac{3}{4}$				$\frac{1}{6}$			
$\frac{1}{5}$				$\frac{5}{6}$			
$\frac{2}{5}$				$\frac{1}{8}$			
$\frac{3}{5}$				$\frac{3}{8}$			
$\frac{4}{5}$				$\frac{5}{8}$			
$\frac{1}{10}$				$\frac{7}{8}$			
$\frac{2}{10}$				$\frac{1}{9}$			
$\frac{3}{10}$				$\frac{1}{20}$			
$\frac{4}{10}$				$\frac{1}{25}$			
$\frac{5}{10}$				$\frac{1}{50}$			
$\frac{6}{10}$				$\frac{1}{100}$			
$\frac{7}{10}$				$\frac{1}{200}$			
$\frac{8}{10}$				$\frac{3}{25}$			
$\frac{9}{10}$				$\frac{11}{20}$			
$\frac{10}{10}$				$\frac{7}{50}$			
		200%		$\frac{1}{7}$			

GDP per Capita

The top five countries in terms of GDP per capita are[1]:
- Switzerland $84,000 GDP per capita
- Norway $78,000 GDP per capita
- Ireland $77,000 GDP per capita
- Qatar $70,000 GDP per capita
- USA $65,000 GDP per capita

Other countries/regions are:
- France $42,000 GDP per capita
- European Union $36,000 GDP per capita
- China $10,000 GDP per capita
- India $2,000 GDP per capita
- Nepal $1,000 GDP per capita

---

1. This is according to the IMF, and for countries with populations greater than 1 million.

Where do America's Imports Come from?

(Listed here are the USA's top five import countries. All figures are in billions of dollars.)

Year	China	Canada	Mexico	Japan	Germany	All other Countries Combined
2004	196.7	255.9	155.8	129.6	77.2	
2005	243.5	287.9	170.2	138.1	84.8	
2006	287.8	303.4	198.3	148.1	89.1	
2007	321.5	313.1	210.8	145.5	94.4	
2008	337.8	335.6	215.9	139.2	97.6	
2009	296.4	224.0	176.5	94.9	71.3	
2010	364.9	276.5	229.7	120.3	82.7	
2011	399.3	316.5	263.1	128.8	98.4	
2012	425.6	324.2	277.7	146.4	108.5	
2013	440.4	332.1	280.5	138.5	114.6	
2014	466.7	346.1	294.2	133.9	123.2	
2015	481.9	295.2	294.7	131.1	71.8	
2016	462.8	278.1	294.2	132.2	114.2	
2017	505.6	299.9	314.1	136.5	117.8	
2018	539.5	318.5	346	142.6	125.9	
2019	452.2	319.7	358.1	143.6	127.5	1,731