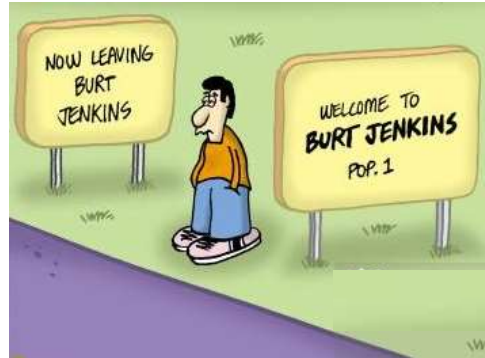


## A QUEST FOR HUMAN POPULATION



Use this guide and the links provided within to learn about different facts related to the human population. As you perform the tasks, add the new information gained to the appropriate places in your notes packet.

### **Task 1: The United States Population and Census (notes page 43)**

- a. What is the study of demographics?  
What criteria of a society are often included in a demographic analysis / study?
- b. Go to <https://www.census.gov/popclock/> and find out the current world population and most populous nations as of July 2020 (you can round the numbers if you like).
- c. The United States Census is performed every 10 years to get an accurate account of the number of people living within the country. What was the population of the United States recorded in the last two census reports? <http://www.cnn.com/2013/08/27/us/u-s-census-fast-facts/index.html>

### **Task 2: PBS.org - NOVA – Human Numbers Through Time (notes page 43)**

Go to <http://www.pbs.org/wgbh/nova/earth/global-population-growth.html>

\*\*Because Flash Player is on its way out and the interactive probably doesn't work anymore, click on "printable version" tab to see the world's population progression throughout the years \*\*

This is a cool simulation to show the world's population growth and distribution over the course of the last 2000 years. Launch the interactive and read the information. Figure out the average world growth rate problem set up in your notes. Just so you know, this question is designed to help you accomplish a tricky task that you will undertake in your near future (make a mental note right now: **Moderna** question d).

\*\* If you can't figure it out the math problem ... no worries ... just at least check out the simulation and we will revisit this together when we get up to this part of the topic \*\*

### **Task 3: Fertility Rate (notes page 44)**

1. Go to <https://ourworldindata.org/fertility-rate>. This website has a great deal of background information regarding fertility rate as well recent statistics from 2015 presented in many interactive formats. I spent a great deal of time messing around with the interactive graphs and charts, as well as the links provided. This is a well-developed site, but there are some “formatting bugs” that I noticed when using the interactive functions on different platforms. (Google Chrome worked real well, but Explorer was a bust ...)

a. Find the definition of “TFR” and record it in your notes.

b. Click on the tab labeled “All our charts on Fertility Rate”. Scroll down to the “Children per Woman”



If it doesn't open on a left click, right click and open in new tab.

Find the TFR data for the locations in your notes. It's easiest to get this information by using the Chart tab below the graph.

2. Do an internet search for the definition of “replacement fertility rate” .

Write the definition, as well as the requested statistics, in the area provided in your notes.

3. Using your knowledge, and/or doing an internet search, fill in the 4 important historical events that would explain the U.S. TFR trends as by depicted by the graph at the bottom of page 44.

### **Task 4: Factors that Affect Birth and Death Rates (notes page 45)**

1. You know from your experiences this year that there are many “Top 5” lists that we apply to different concepts. This time, the lists will be a little more extensive, but yet again, I will eventually help you limit the lists to focus on the most important factors. Perform internet searches to find 10 factors that affect a human population's birth rate and 8 more that most directly affect a human population's death rate. If you lack confidence in your findings do this part in pencil if you need to make changes after our group discussion.

2. What 2 quantitative stats can be obtained that can give the best indicator of a society's “overall quality of life” of a society? For you information, “quality of life” is different from “standard of living” although there really are quite a bit of overlapping themes. This one might be a difficult answer to find. You will probably find some good answers, but of course there has to be one that is “curriculum-based” and that is the one I'm looking for.

## **Task 5: Population Pyramids (a.k.a. Age Structure Diagrams)** **(notes page 50)**

Go to the Population Pyramids Interactive Site: <https://www.populationpyramid.net/>

This site has two really great functions. First, it has a wide variety of countries, regions or even U.N. classifications available to view the population pyramid of that region as it appears today. The second function that is cool to play around with is the ability to see changes in each population over time. You can incrementally view the population pyramid as it has changed since 1950 to the present (in one or five year intervals). This is, of course, based on real data compiled over years of demographic studies. You can also use the site to project the future population of a region that has been calculated based on current trends in data.

Your Task:

1. Check out the population pyramids of each of the countries / classifications that are listed below.
2. In the **boxes below the pyramid diagrams on page 50 of your notes packet**, write the names of the countries/classifications that fit the shape of each of the four diagrams shown.
3. Some of the countries I picked for you to check out will not fit one of the patterns (you will see what I mean) I picked a couple of very unique population distribution patterns for us to discuss in class.

United Kingdom	Portugal	Russian Federation
Kenya	United States	India
Germany	Mexico	Congo
France	Qatar	Japan
United Arab Emirates	Turkey	China
Uganda	Australia	Thailand
Least developed Countries	Less Developed Countries	More Developed Countries

## **Task 6: Hans Rosling's 200 Countries, 200 Years, 4 Minutes**

Check out this video: <http://mrromano.com/Videos%20-%20Movies/3%20-%20Population%20Videos/3%20-%20Hans%20Rosling%27s%20200%20Countries,%20200%20Years,%204%20Minutes%20-%20The%20Joy%20of%20Stats%20-%20BBC%20Four.mp4>

This is a really great way to represent stats in a brief amount of time. Don't worry about taking notes on this. Just watch and enjoy what Dr. Rosling does.



## Task 7: Guinness Record Time ...

### What is the greatest number of children born to one woman?

*I know you are curious ...*

(<http://www.guinnessworldrecords.com/world-records/most-prolific-mother-ever>)

The greatest officially recorded number of children born to one mother is 69, to the wife of Feodor Vassilyev (b. 1707–c.1782), a peasant from Shuya, Russia. In 27 confinements she gave birth to 16 pairs of twins, seven sets of triplets and four sets of quadruplets.

Numerous contemporaneous sources exist, which suggest that this seemingly improbably and statistically unlikely story is true.

The case was reported to Moscow by the Monastery of Nikolsk on 27 Feb 1782, which had recorded every birth. It is noted that, by this time, only two of the children who were born in the period c. 1725–65 failed to survive their infancy.

*The Gentleman's Magazine* (1783, 53, 753) recounts: "In an original letter now before me, dated St Petersburg, Aug 13, 1782, O. S. Feodor Wassilief [sic], aged 75, a peasant, said to be now alive and in perfect health, in the Government of Moscow, has had–

In all, 35 births, 87 children, of which 84 are living and only three buried. . . The above relation, however astonishing, may be depended upon, as it came directly from an English merchant at St Petersburg to his relatives in England, who added that the peasant was to be introduced to the Empress."

**By his first wife:**

$$4 \times 4 = 16$$

$$7 \times 3 = 21$$

$$16 \times 2 = 32$$

-----

27 births 69 children

**By his second wife:**

$$6 \times 2 = 12$$

$$2 \times 3 = 6$$

-----

8 births 18 children

In *Saint Petersburg Panorama*, Bashutski, 1834, the author notes that:

"In the day of 27 February 1782, the list from Nikolskiy monastery came to Moscow containing the information that a peasant of the Shuya district, Feodor Vassilyev, married twice, had 87 children. His first wife in 27 confinements gave birth to 16 pairs of twins, seven sets of triplets and four sets of quadruplets. His second wife in eight confinements gave birth to six pairs of twins and two sets of triplets. F. Vassilyev was 75 at that time with 82 of his children alive."

And the *Lancet* (1878) refers to a twin study carried out by the French Academy and:

"Apropos of the enquiry, the Committee of the Academy recall an account of a quite extraordinary fecundity that was published by M. Hermann in his "Travaux Statistiques de la Russie," for Fedor Vassilet [sic]. . . who, in 1782, was aged 75 years, had had, by two wives, 87 children."

Aside from this, not much is known about the first Mrs Vassilyev - even her first name (although some sources claim her name was Valentina). It is thought she lived to the age of 76.

Although this historic record should be taken with a pinch of salt, it is certainly conceivable that Mrs Vassilyev could have had a genetic predisposition to hyper-ovulate (release multiple eggs in one cycle), which significantly increases the chance of having twins or multiple children.

It is also not impossible for a woman to have 27 pregnancies during her fertile years.