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Answer sheet

Module 1, Lesson 1-2

The basics and geographic inquiry methods

Task 3: Work with layers

**Q1)** Which layers are turned on in the Contents and visible on the map?

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Task 5: Add a layer to your map

**Q2)** What makes this a geographic question?

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**Q3)** Write a hypothesis that answers the geographic question.

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Task 6: Add a layer to your map

**Q4)** What is the name of the layer that has been added to your table of contents?

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**Q5)** Can you guess as to what data this layer has in it by its name?

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Task 7: Explore the World Phone Lines Land map

**Q6)** What color in the legend for the World Phone Lines Land layer indicates countries with the fewest phone lines? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q7)** What color indicates countries with the most phone lines?

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**Q8)** What color indicates countries with no data or “other” available for this layer?

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**Q9)** What other layer in your map has a graduated color legend?

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**Q10)** Which two countries have the most phone lines?

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**Q11)** On which continent are most of the countries with the fewest phone lines?

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**Q12)** Which two countries have the largest populations?

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**Q13)** Name the five countries that are in the same population class (color) as the United States.

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**Q14)** Which of the five countries, if any, are in the same phone line class (color) as the United States?

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**Q15)** What two fields might help in answering the geographic question?

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Task 8: Investigate the relationship between phone lines and population in China

**Q16)** What was the population of China in 2015? Record the answer in the table below.

**Q17)** How many phone lines did China have in 2015? Record the answer in the table below.

**Q18)** What was the number of people per phone line in China? Record the answer in the table below.

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | **Population** | **Phone lines** | **People/phone line** |
| China | 1,393,417,233 | 350,433,000 | 3.98 |

Task 9: Investigate the relationship between population and phone lines for all countries

**Q19)** For each country in the table below, what is the population, number of phone lines, and number of people per phone line? The first country, China, is already filled in for you.

|  |  |  |  |
| --- | --- | --- | --- |
| **Country** | **Population** | **Phone lines** | **People/phone line** |
| China | 1,393,417,233 | 350,433,000 | 3.98 |
| India |  |  |  |
| United States |  |  |  |
| Indonesia |  |  |  |
| Brazil |  |  |  |
| Pakistan |  |  |  |
| Bangladesh |  |  |  |
| Nigeria |  |  |  |

Task 10: Analyze the results of your research

**Q20)** In the table below, the column on the left ranks the countries by population from highest to lowest. In the column on the right, rank the countries from the lowest number of people per phone line to the highest number of people per phone line, using the data from Q19. Then draw lines connecting the name of each country in one column with the name of the same country in the other column.

|  |  |
| --- | --- |
| **Ranked by population (highest to lowest)** | **Ranked by people/phone line (lowest to highest)** |
| China |  |
| India |  |
| United States |  |
| Indonesia |  |
| Brazil |  |
| Pakistan |  |
| Russia |  |
| Japan |  |

**Q21)** Which country has the fewest people per phone line?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the number of people per phone line in this country? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q22)** How does the country in Q21 rank in population size among the eight countries in your table? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q23)** Which country has the most people per phone line? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

What is the number of people per phone line in this country? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q24)** How does the country in Q23 rank in population size among the eight countries in your table? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Q25)** What country has the most phone lines? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How does the number of people per phone line in this country compare with the numbers of people per phone line in the seven other countries in your table?

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**Q26)** Bangladesh and Pakistan have approximately the same number of people. Why do you suppose these two countries have such different numbers of people per phone line?

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What factors do you think contribute to this disparity? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Q27)** What is the answer to the geographic question?

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**Q28)** Compare your initial hypothesis (Q2) with your answer in Q27. How does your hypothesis compare with your answer to the geographic question?

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Task 10: Develop a plan of action

**Q29)** What country did you choose? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the information in the table in Q20 to describe the phone line situation in your chosen country.

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**Q30)** Do you think that increasing the number of phone lines operating in your chosen country would improve the quality of life there? Why or why not?

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**Q31)** List three concerns you have about increasing the number of phone lines in your chosen country.

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**Q33)** List two new geographic questions that you would like to investigate to help you develop a sound plan.

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