Compute This! Sample Test – USGS.gov

Background
Despite increased knowledge of what earthquakes are and how to react to earthquakes, there is still no reliable method for predicting when these events will happen. Thousands of people die every year due to earthquakes and other disasters caused by earthquakes.

Graphical Problem

Using Microsoft Excel, create a data table of all earthquakes that resulted in more than 50,000 fatalities since the year 1900. Include the year of the earthquake, where the earthquake took place (if possible, city or region, and country), the magnitude of the earthquake, and the number of deaths caused by the earthquake. You must find this information on the United States Geological Survey website. Please provide the associated URL you used to find this information below your data table.

Create a **bar graph** in Microsoft Excel, using your data table, which displays where these earthquakes took place and the number of fatalities, organized in order from the least number of deaths to the greatest number of deaths. Remember to insert a title on your graph and label each axis.

Short Answer Questions

In Microsoft Word, please answer the following questions by giving the answer and the associated URL. All answers must come from the USGS website. Complete sentences are not required. Multiple answers and/or URLs may be required.

1. Give the date and locations of the largest *and* deadliest earthquakes from the year 2009.

2. Give the number of earthquakes between 2000 and 2009 in the United States with a magnitude of 6.0 or greater.

3. Name the city, date, time, and magnitude of the largest earthquake in Kansas and the largest earthquake in Missouri.

4. What is the Parkfield experiment?

5. What do Earthquake Scenarios describe?

ANSWER KEY

Student Name and Student Name, School Name, Team Number

Compute This! Short Answer Questions

1. **Give the date and locations of the largest *and* deadliest earthquakes from the year 2009.**

Answer: The largest earthquake occurred on September 29, 2009, in the Samoa Islands region. The deadliest earthquake occurred on September 30, 2009, in the Southern Sumatra region of Indonesia.
http://earthquake.usgs.gov/earthquakes/eqarchives/year/byyear.php

2. **Give the number of earthquakes between 2000 and 2009 in the United States with a magnitude of 6.0 or greater.**

Answer: 63
http://earthquake.usgs.gov/earthquakes/eqarchives/year/eqstats.php#table_us

3. **Name the city, date, time, and magnitude of the largest earthquake in Kansas and the largest earthquake in Missouri.**

Answer: The largest earthquake in Kansas was a magnitude 5.1 recorded at 20:22 UTC on April 24, 1867, in Manhattan, KS. The largest earthquake in Missouri was a magnitude 7.7 recorded at 9:45 UTC on February 7, 1812, in New Madrid, MO.
http://earthquake.usgs.gov/earthquakes/states/events/1867_04_24.php
http://earthquake.usgs.gov/earthquakes/states/events/1811-1812.php#february_7

4. **What is the Parkfield experiment?**

Answer: The Parkfield experiment is an attempt to predict a Parkfield, California earthquake.
http://earthquake.usgs.gov/learn/topics/?topicID=53&topic=Prediction

5. **What do Earthquake Scenarios describe?**

Answer: Earthquake Scenarios describe the expected ground motions and effects of specific hypothetical large earthquakes.
http://earthquake.usgs.gov/hazards/products/scenario/

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Year	Location	Magnitude	Fatalities
1976	Tangshan, China	7.5	255,000
2004	Sumatra	9.1	227,898
2010	Haiti Region	7.0	222,570
1920	Haiyuan, Ningxia, China	7.8	200,000
1923	Kanto, Japan	7.9	142,800
1948	Ashgabat, Turkmenistan	7.3	110,000
2008	Eastern Sichuan, China	7.9	87,587
2005	Pakistan	7.6	86,000
1908	Messina, Italy	7.2	72,000
1970	Chimbote, Peru	7.9	70,000
1990	Western Iran	7.4	50,000*
http://earthquake.usgs.gov/earthquakes/world/most_destructive.php			

*Any number between 40,000 and 50,000 is acceptable