

# Chapters 1, 2, 3, & 4 - Exam 1 Study Guide



1. Geography means -
2. Earth Major Divisions or Environmental Spheres -
3. Diameter & circumference of Earth -
4. Great Circle -
5. Latitude -
6. Longitude -
7. Prior to the 19th Century (1884), local time was determined by -
8. Traveling from San Francisco to Japan (westward), you would change what?  
Please give specific example:
9. "Revolution" and "Rotation" in terms of Earth / Sun relationships means -
10. Two (2) major causes of seasons -
11. Solstices occur when and where (the sun is directly overhead) -
12. Equinoxes occur when and where (the sun is directly overhead) -  
What happens to the day length, especially as you head poleward?
13. Arctic Circle significance related to daylight and nighttime
14. Tropic of Cancer & Capricorn – where located and relationship to the solstices



15. How is a map different than a globe?

16. Fractional Map Scale / representative fraction (RF) -

17. List three (3) map projection families

18. Mercator – the most famous projection has pros & cons.. what are they?

19. Other Grid Systems (besides Lat./Long) are State Plane and \_\_\_\_\_.

Main characteristics of each -

20. Public Land Survey - How big is a township?

What about a “section” size?

21. Example of isolines and common uses -

22. Multispectral Remote Sensing and the main use of **thermal IR** (Infrared) sensing compared to visible light and near IR?

23. GPS / GNSS basics - is based on a constellation \_\_\_\_ (number of them), high-altitude satellites using a minimum of \_\_\_\_ (number of them) that are in view of any position on Earth.

24. GIS overlay analysis - what are some common layers and how could you use them to solve a spatial problem related to flooding and wildfires?

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25. What does our atmosphere provide us?



26. Composition of atmosphere (main gasses) -

27. CO<sub>2</sub> compared to O<sub>3</sub> (ozone) -

28. “Insolation” affects temperature -

29. Troposphere -

30. Weather versus climate -

31. Insolation - how related to green house effect?

32. List main “controls” of causes of weather and climate -

33. **Latitude** influence temperature - everyone knows it gets colder as go north & south from the equator, but why?

34. **Distribution of Land & Water** - which places would have the most *moderated* climate (west to east): Seattle, Minneapolis, MN, Fargo, ND, coastal New Jersey and **why** -

35. **Wind Currents** (General Circulation of the Atmosphere) - what is the impact to our climate on the west coast and the east coast of the United States?

36. Famous warm ocean current streaming across Atlantic to Britain -

37. Cold ocean currents off west coast (also known as the eastern ocean basins... for example the eastern side of the Pacific Ocean) often create what kind of climates, such as in California or Baja, Mexico?

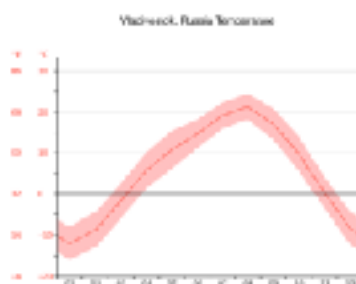
38. **Landform & Topographic Barriers** / “rain shadow” - impacts

39. From the Controls of Weather & Climate / Climograph Exercise.. of the following places - San Francisco - CA, Vladivostok - Russia and Reykjavik - Iceland, answer the following questions:



> **Question:** which one of the climographs has the coldest winter?

> **Question:** which one of the climographs has the warmest summer days?



> **Question:** which one of the following below has the steepest (like a giant roller coaster) climograph? Is this a continental climate?

> **Question:** which one of the following below has the gentle curve (like a mild slope) climograph? Is this a continental climate?

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40. Elaborate on radiation related to absorption, reflection, scattering, & transmission

41. Conduction -

42. Convection -

43. Advection -

44. Adiabatic cooling -

45. Adiabatic warming -

46. Latent heat of condensation -

47. Percentage of insolation reaches Earth's surface -

48. Environmental lapse rate -

49. Surface inversions -

50. Greenhouse effect -

