Earth Science Overview:

1. **Which of the following is NOT in one of the main areas of Earth Science?**
   a. Geology
   b. ==**Astrology**==
   c. Oceanography
   d. Astronomy

2. **Earth's four major spheres are the _____.**
   a. ==Hydrosphere, atmosphere, geosphere, and biosphere==
   b. Hydrosphere, atmosphere, lithosphere, and biosphere
   c. Hydrosphere, asthenosphere, lithosphere, and biosphere
   d. Hydrosphere, geosphere, lithosphere, and asthenosphere

3. **What is the driving force for the movement of the lithospheric plates?**
   a. Heat from the sun
   b. ==**Unequal distribution of heat within the Earth**==
   c. Heat in the atmosphere
   d. Unequal distribution of heat in the oceans

4. **Earth is considered a system because all of its parts _____.**
   a. Represent separate closed systems
   b. ==**Interact**==
   c. Were formed at the same time
   d. Are powered by the same energy source

5. **Create a list of the four earth spheres and list two (2) areas of scientific study for each.**

   - ==**Hydro – oceans & water cycle**==
   - ==**Bio – plants/animals & environment/biomes**==
   - ==**Atmos – weather & climate**==
   - ==**Geo – rocks & plate tectonics**==

Mapping:

6. **On the global grid, the prime meridian is at _____.**
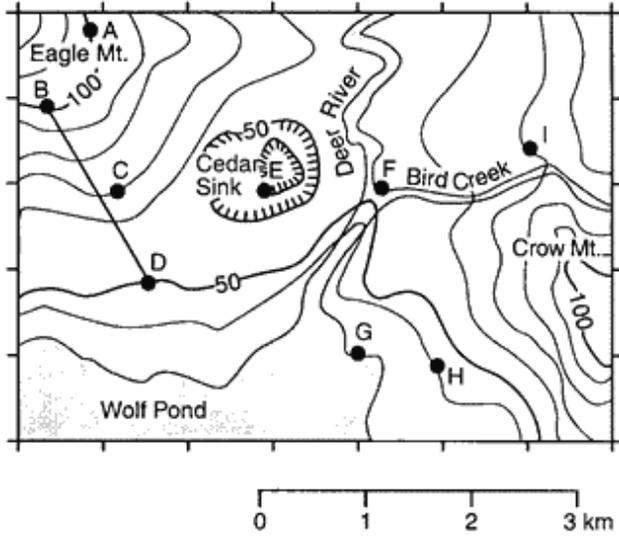   a. 0 degrees latitude
   b. ==**0 degrees longitude**==
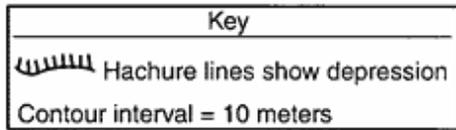   c. 90 degrees latitude
   d. 90 degrees longitude

7. On a topographic map, contour lines that are closer together indicate _____.
    a. Forest
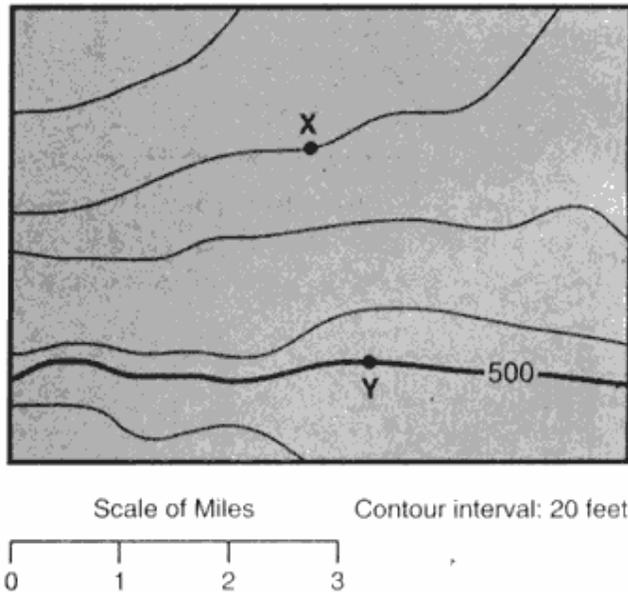   b. A mountain top
    c. **A steeper slope**
    d. Roads

8. What locations have the same elevation?

    a. A and E
    b. **C and I**
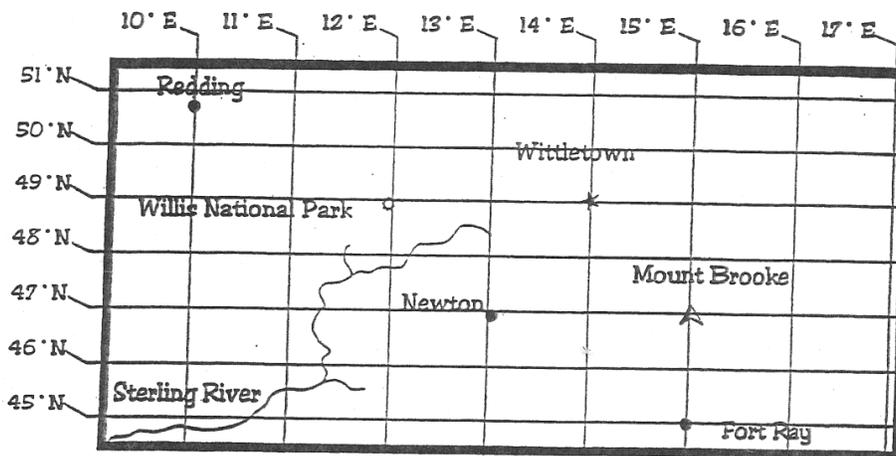   c. D and H
    d. B and D

9. What is the approximate gradient between X and Y?

    a. 15 ft/mi
    b. 20 ft/mi
    c. **30 ft/mi**
    d. 60 ft/mi

Use the following map below to answer the next seven (7) questions.

10. What is located at 49° N latitude and 12° E longitude? _Willis National Park_

11. What two places are located at 15° E latitude? _Mount Brooke_ ; _Fort Ray_

12. The city of Newton is located at _47_° N and _13_° E

13. The city of Wittletown is located at _49_° N and _14_° E

14. What is located at 51° N latitude and 10° E longitude? _Redding_

15. Lines of latitude run _north_ and _south_ parallel to the equator.

16. Lines of longitude run east and west of the _prime meridian_.

Metrics and Measurement:

17. 100,654 g = __1,006,540__ dg

18. 307.345 cg = __3.07345×10^{-3}__ kg

19. 9.9 mL = __9.9×10^{-3}__ L

20. 0.7737 mm = __7.737×10^{-7}__ km

21. 29.1 hL = __2.91×10^{6}__ mL

22. 2016 m = __201,600__ cm

Scientific Method:

23. What makes a hypothesis scientifically useful?
   a.   Many people think it is a good idea

   b. **It can be tested**

   c.   It contains numerical data
   d.   It applies directly to Earth Science

24. In scientific inquiry, when competing hypotheses have been eliminated, a hypothesis may be elevated to the status of a scientific _____.
   a.   Estimate
   b.   Idea

   c. **Theory**

   d.   Truth

25. A Horticulturist wants to determine if fertilizer speeds the growth of her tomato plant. She applies one teaspoon of fertilizer a month to one plant for one year, and none to the other over the same time span. Both plants are placed in under the same growing conditions including soil, access to sunlight and amount of water. What was the dependent variable in the experiment?
   a.   The fertilizer

   b. **The rate of growth**

   c.   The sunlight access
   d.   The ambient temperature

26. In the classroom during a visual inspection of a rock, a student recorded four statements about the rock. Which statement about the rock is an observation?
   a.   The rock was from the Precambrian Era
   b.   The rock formed deep underground

   c. **The rock is black and shiny**

   d.   The rock cooled very rapidly
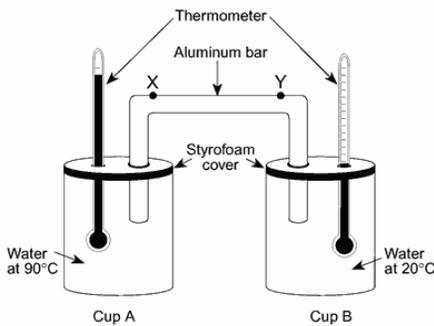
Minute	Temperature of Water (°C)	
	Cup A	Cup B
0	90	20
1	88	20
2	86	20
3	85	21
4	83	21
5	82	22
6	81	22
7	80	22
8	79	22
9	78	23
10	77	23
11	76	23
12	75	23
13	74	23
14	73	23
15	72	24
16	71	24
17	70	24
18	69	24
19	68	25
20	67	25

27. The rate of temperature change for water in cup A for the first 10 minutes is approximately _____.

   a. **1.3°C/min**   c. 77°C/min

   b. 13°C/min   d. 90°C/min

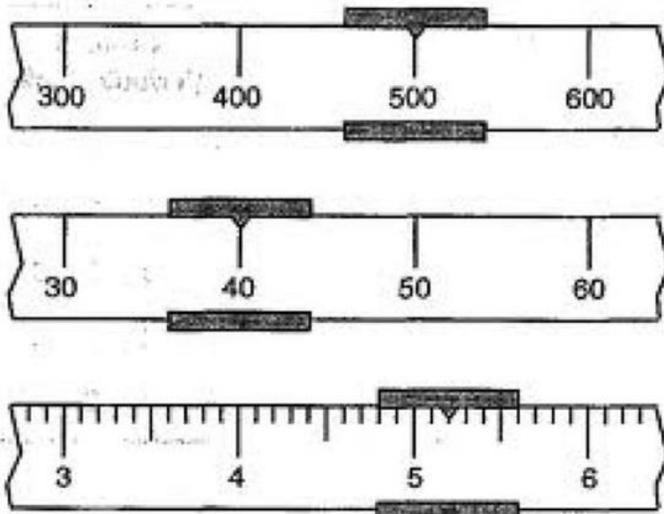**28. Read and record the volume (with correct unit) of each graduated cylinder:**

1.20 mL   **2.70 mL**   **4.40 mL**
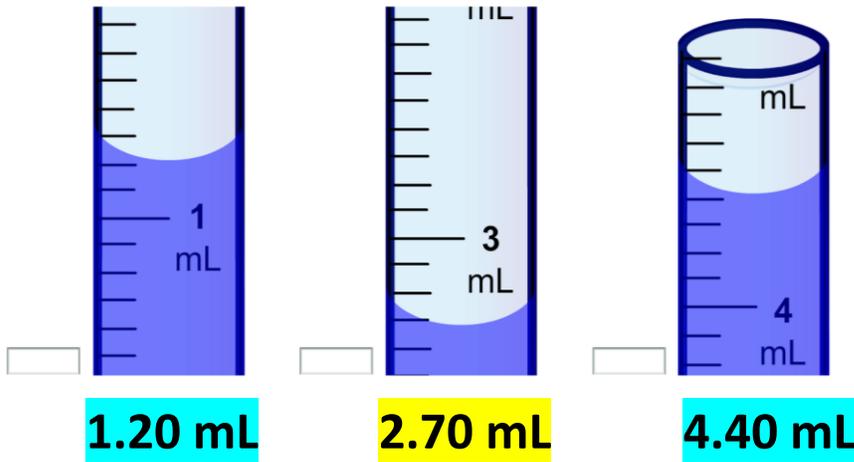
29. Read and record the length (with correct unit) of the ruler:

62.0 cm OR **620 mm**

30. Read and record the mass (with correct unit) on each triple beam balance:

500.0 g + 40.0 g + 5.20 g = **545.2 g**