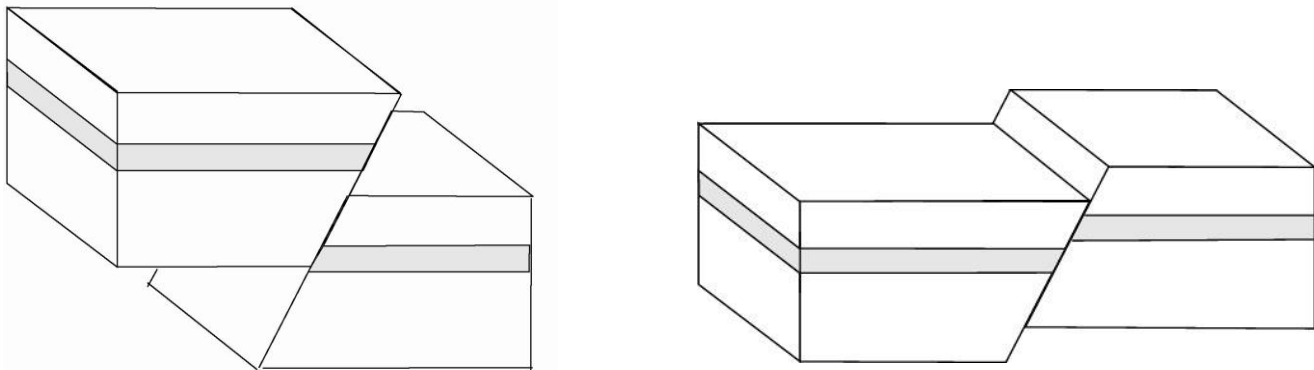


Geology 10 - Exam 1 Pass Sheet

If you can answer all these questions correctly on the exam, you will get a 70% pass. (Questions will appear on the exam in a different order and with different numbers.) There will be additional question on the exam (~25 to 30% of the exam will be better-than-pass questions - see weekly question sheets for content). These can help you to raise your grade from 70 (C) to a B (80-89) or A (90+). Note: YOU MUST BRING THIS COMPLETED SHEET WITH YOU TO TAKE THE EXAM - NO SHEET - NO EXAM. Exam will be closed notes, closed book, - you cannot use this sheet on the exam. Good luck!

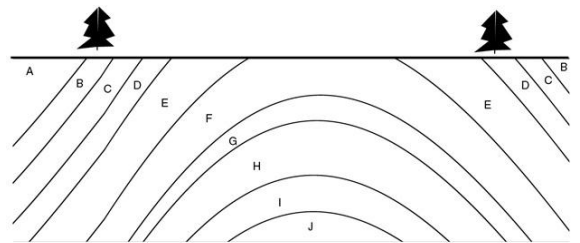
1. <i>Approximately</i> how many times more energy is released in a magnitude 7 earthquake than in a 6?		
2. How did Earth form?		
3. From what main source did the oxygen in today's atmosphere originally come from?		
4. From what two sources did the water in today's oceans originally come from?		
5. Where in the oceans is the newest ocean crust found?		
6. For each of the following moments in Earth's history, place in order from youngest (top) to oldest (bottom) and give ages. (8 pts)	Event (youngest at top)	Age of event
Earth formation		
Layers formed		
Multicelled life evolved		
Oceans formed		
Oldest ocean floor currently in oceans today		
Photosynthesis first occurred		
Plants and animals move onto land		
Prokaryotic life (bacteria) evolved		
7. For each of the following objects, place in order from smallest (top) to tallest (bottom) and give depths/thicknesses/etc. in kilometers. (8 pts)	Object depth or height (smallest at top)	Depth in km
Average thickness of ocean crust		
Continental shelf break depth		
Deep sea floor (abyssal plain) depth		
Deepest hole ever drilled on the planet		
Depth sea level would fall during an ice age		
Depth sea level would rise if all the ice melted		
Highest mountain elevation		
Radius of planet Earth		
8. What kind of continental margin is the East Coast of the United States?		
9. What kind of continental margin do we live on here in San Francisco?		
10. What kind of plate boundary do we live on here in San Francisco?		
11. Volcanic activity can be found		
12. in three different geologic		
13. settings. What are these?		
14. In which layer does Earth's magnetic field originate?		
15. What characteristics and behavior of this layer produce the magnetic field? (Be specific!)		

DATE: _____ NAME: _____

16. What types of seismic wave can travel through all materials (solids, liquids, gases)?	
17. Based on the principles of isostatic equilibrium or adjustment, what happens to mountains when the top is eroded away	
18. What type of seismic wave arrives first at a seismograph after an earthquake?	
19. What is the primary cause of a rift valley?	
20. What is the primary cause of a trench?	
21. Give three ways that continental crust differs from oceanic crust (be SPECIFIC!).	
22. Which earth layer is responsible for plate tectonics? (Without this layer there could be no tectonic movements!)	
23. What characteristics and behavior of this layer produce plate tectonics? (Be specific!)	
24. Draw arrows on the right and left of the drawings to indicate the directions of stress. 25. Draw arrows along the fault planes to indicate relative motion. 26. Label hanging wall and footwall. 27. What is the name of each fault?	
	
28. Provide at least two conditions that would cause plastic (as opposed to brittle) deformation.	
29. Name the four layers of ocean crust	TOP LAYER:
30. known as the ophiolite sequence:	LAYER 2:
	LAYER 3:
	BOTTOM LAYER:
31. Draw a picture (to scale) of Earth's MAIN compositional layers.	34. In the cross-section, clearly label these layers/features:
32. (Draw a pie slice OR a circle.) Label ALL!	35. asthenosphere, core (inner and outer), crust, lithosphere,
	36. mantle, and moho. Be sure to carefully distinguish each.

37. Through what two main
38. processes do continents grow?

39. Place an X **on the ground surface** of this cross-section where you would find the oldest rocks.
40. What's the name of this structure?



41. What causes earthquakes?
42. (Be **thorough** - give 7-step
43. description of cause and effect.)
- 1.
 - 2.
 - 3.
 - 4.
 - 5.
 - 6.
 - 7.

- 44. Draw a picture
- 45. (to scale) of a
- 46. subduction zone.
- 47. Label and include everything!

Plate Boundary Type	Transform	Divergent	Convergent
48. Stress type			
49. Mountain type (if any)			
50. Motion (use arrows)			

- 51. Draw a cross-section through the Atlantic Ocean.
- 52. Show both continental margins
- 53. and draw as deep as the Asthenosphere.
- 54. Label all features of plate boundaries
- 55. and margins (one side only).
- 56. Be thorough and precise.