Physical Geology
South Sevier High School
Lecture Notes – Chapter 15

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Name _____
Date _____
Per _____

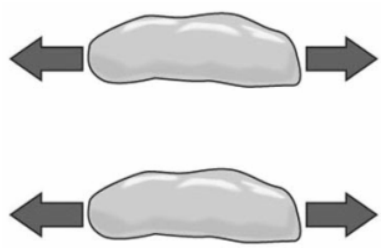
1. _____ Geology is the study of the shapes, arrangement, and interrelationships of rock units and the forces that cause them.

2. _____ is force per unit area applied to rock. The three basics types are:

   a. _____
   b. _____
   c. _____

3. _____ is a change in size or shape of rock in response to applied stress.

4. For the following pictures, write down the type of stress that is being depicted.



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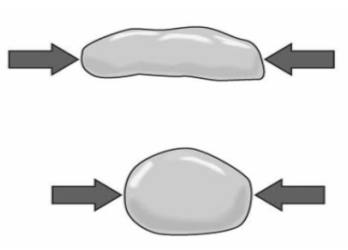

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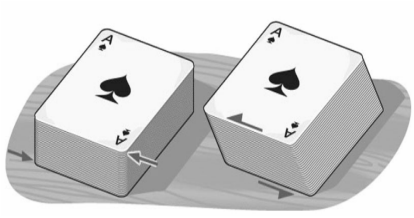

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5. Rocks behave as elastic, ductile or brittle materials depending on the amount and the rate of _____ applied, the _____ of rock, and the environmental _____ and _____.

6. A rock that is stressed through tension or compression, then returns to its original shape is said to be _____.

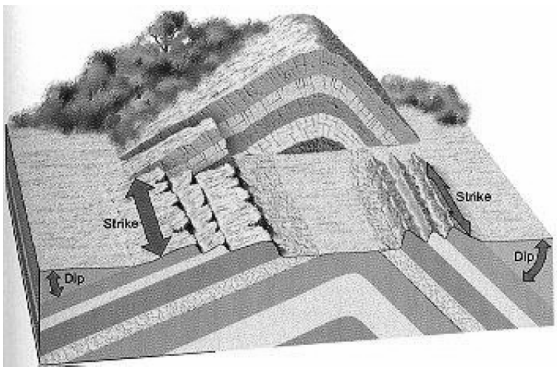
7. A rock that is stressed beyond its elastic limit and bends like a warm plastic is said to be _____.

8. A rock that is stressed beyond its elastic limit and fractures is said to be _____.

9. _____ are places where bedrock is exposed at the surface.

10. _____ is the compass direction of a line formed by the intersection of an inclined plane with a horizontal plane. _____ is the direction and angle from horizontal in which a plane is oriented.

11. Measure the strike and dip for the following two pictures. Assume that the strike measurement is parallel to the ground surface. Letter A has two for you to do, and Letter B has one (5pts each).



A. _____

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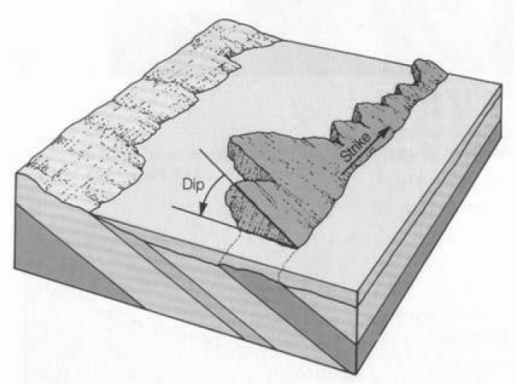


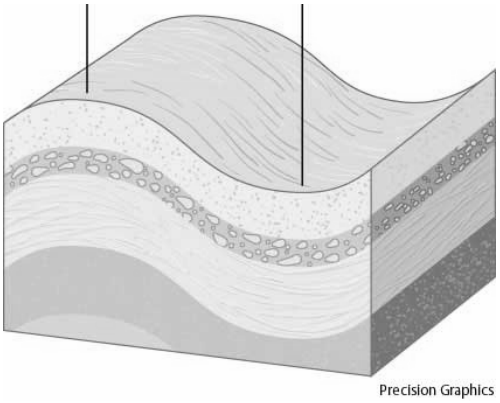
B. _____

12. _____ are wavelike bends in layered rock.

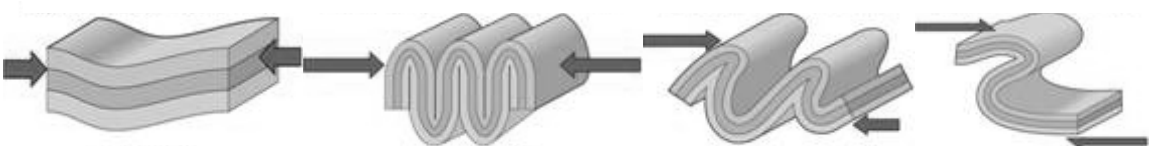
13. _____ are upward-arching folds, and _____ are downward-arching folds.

14. Examine the image below. Label the anticline and syncline.

_____ _____



15. Label the images below with the correct fold type (4pts).



_____ _____ _____ _____

16. _____ are structures in which the beds dip away from a central point (sometimes called doubly plunging anticlines). _____ are structures in which the beds dip toward a central point.

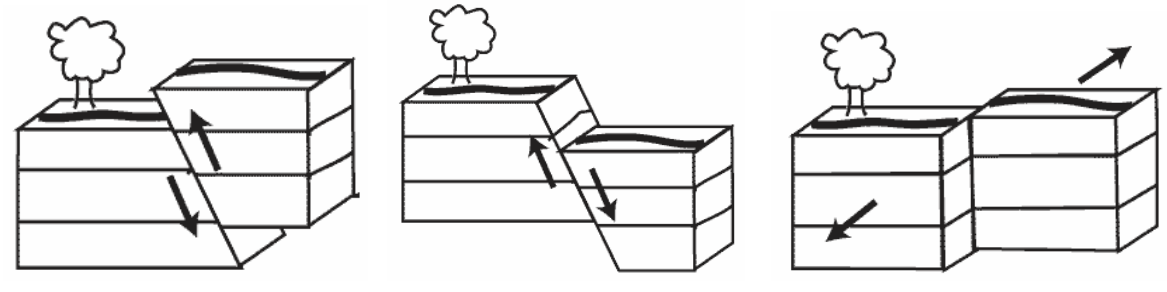
17. _____ are fractures in bedrock along which no movement has occurred. _____ on the other hand are fractures in bedrock along which movement has occurred.

18. A fault is considered active if the fault has moved in the last _____ years.

19. _____ faults have movement parallel to the dip of the fault plane. There are two types which are:
    a. _____ faults, the hanging-wall block has moved down relative to the footwall block.
    b. _____ faults, the hanging-wall block has moved up relative to the footwall block.

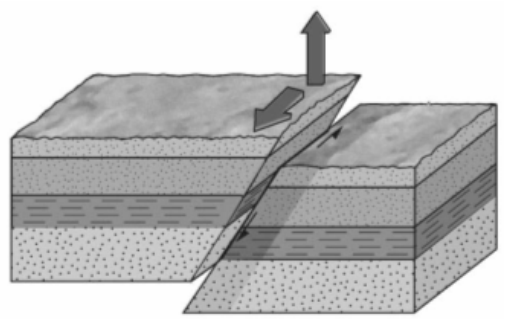
20. _____ faults have movement that is predominantly horizontal and parallel to the strike of the fault plane.

21. Label the faults below as either normal or reverse. Also, label the hanging wall and the footwall where applicable (5pts).



_____ _____ _____

22. What kind of fault is depicted in the picture below?



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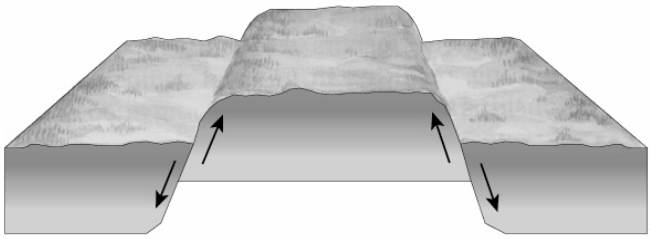
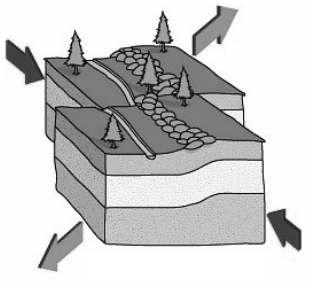
23. Label the horsts and grabens found in the picture below (3pts).



24. _____ faults are reverse faults with dip angles less than 30° from horizontal.

25. Examine the pictures below. Correctly label them as right-lateral or left-lateral strike-slip faults (3pts).



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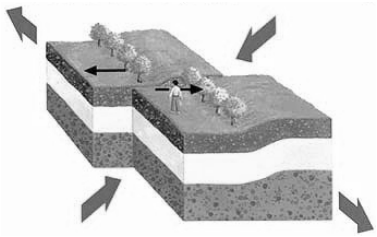

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26. What is the relationship between strike and dip (5pts)?

27. Explain why most of the great mountain chains of the world result from compressional stress (5pts).

28. Why are anticlines such good traps for petroleum (5pts)?

29. How are geologic structures related to Plate Tectonics (5pts)?