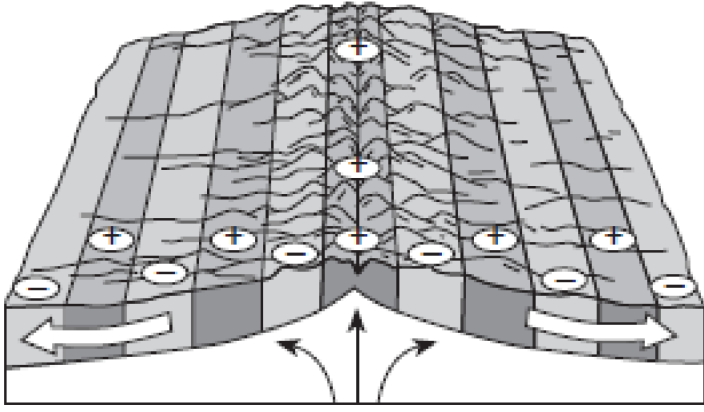
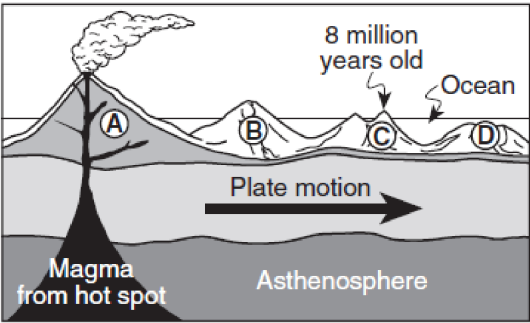
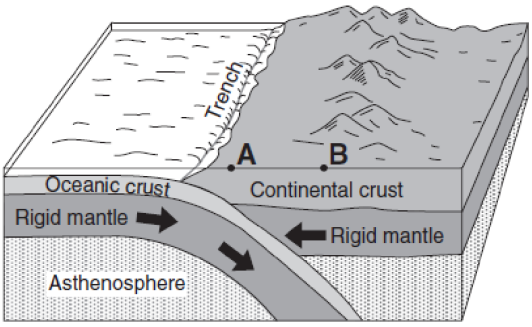
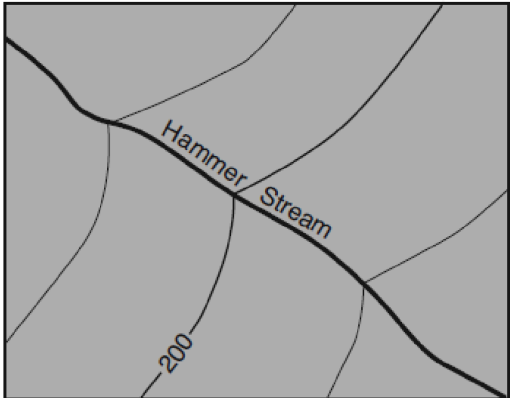
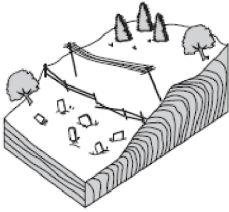
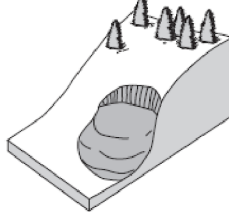
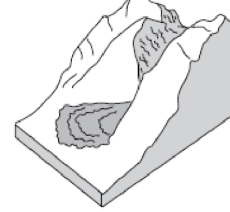
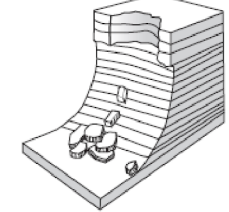

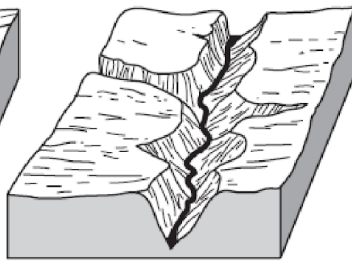

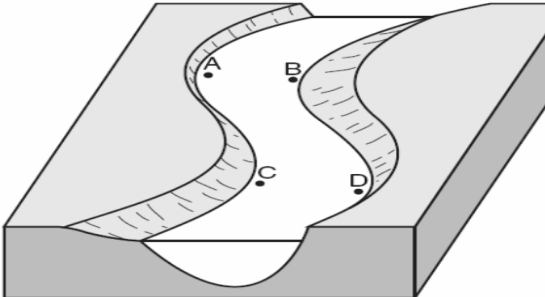
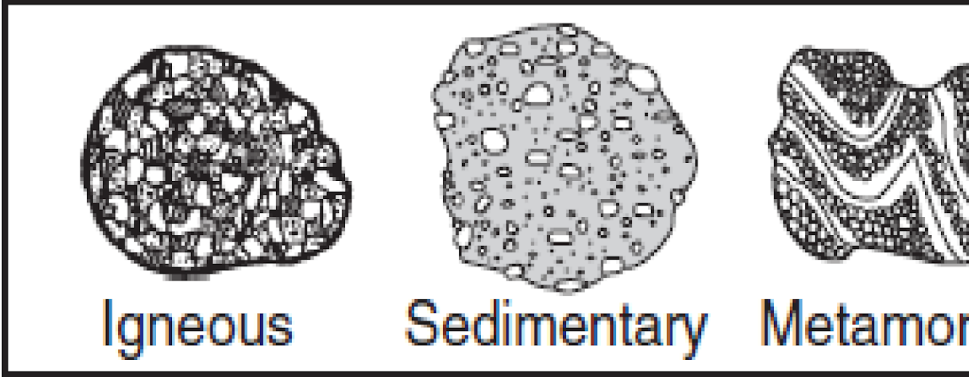
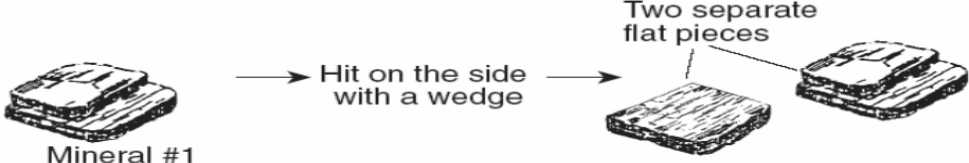

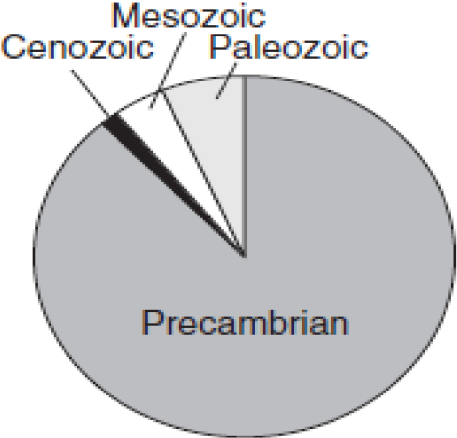
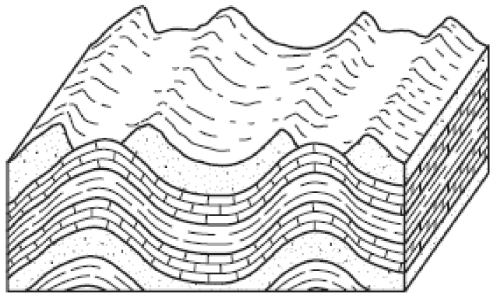


Question and Diagram:	Answer and explanation:
<p style="text-align: center;">Ridge</p>  <p>1. How does the age of the seafloor compare on either side of the ridge?</p>	<p>The youngest rock is in the middle (at ridge) and it gets older on either side as you move away in a symmetrical pattern.</p>
 <p>2. List the volcanic islands in order of increasing age.</p> <p>3. What is a possible age of island B?</p>	<p>A = youngest B C D = oldest</p>
<p>4. Name a chain of islands that has formed in a similar way.</p>	<p>Anything less than 8 million years old</p> <p>Hawaii</p>
 <p>6. Compare the density of the oceanic crust to continental crust.</p> <p>7. What kind of plate boundary is this?</p> <p>8. Describe the relative motion of the tectonic plates here.</p>	<p>Oceanic is denser than continental</p> <p>Convergent</p> <p>comes together/collides</p>
<p>9. Where in the Americas is this happening?</p>	

	West coast USA/ West S.A
	Southeast – contour lines are bending in the opposite direction of stream flow
10. Which way is Hammer Stream flowing? Explain.	
<div style="display: flex; justify-content: space-around; text-align: center;"> <div data-bbox="235 787 462 1081"> <p>Soil creep</p>  <p>Gradual downhill movement of soil</p> </div> <div data-bbox="479 787 706 1081"> <p>Debris flow</p>  <p>Rapid downslope flow of debris</p> </div> <div data-bbox="722 787 950 1081"> <p>Mud flow</p>  <p>Downward flow of fine particles (mud) and large amounts of water</p> </div> <div data-bbox="966 787 1193 1081"> <p>Rock fall</p>  <p>Rapid falling of pieces of rock from a cliff or steep slope</p> </div> </div>	Mass movement (from gravity)
11. What is the name for this category of erosion?	
12. Why is this considered erosion & not weathering?	
	Sediment and rocks are being moved (not broken)
13. What controls the speed of the sediment? (referring to settling rates)	
	Size, Density, Shape
 <p style="text-align: center;">Diagram A</p>	Diagram A: Old-Age
 <p style="text-align: center;">Diagram B</p>	Diagram B: Youthful
 <p style="text-align: center;">Diagram C</p>	Diagram C: Mature
14. What are the names for the stages of this stream's development?	
16. Compare the velocity of the stream in diagram A to Diagram B.	
	The velocity is much lower

		for A (more meanders)
		Locations A and D
		
17. Which locations is the water moving the fastest?		
18. Which locations will have the most deposition?		Locations B and C
19. If a glacier were to advance into the valley of Diagram B, how would the shape of the valley change?		Instead of a V-shape it would be a U-shape
		Ig: Solidification of magma Sed: Cementation of fragments of other rocks Meta: Heat and/or pressure is applied to an existing rock
20. What is the method (process) of formation for each type of rock?		
22. If they were drawn actual size, is the igneous rock intrusive or extrusive? Explain.		Intrusive – large (visible) mineral crystals cool slowly
23. Which rock is a sedimentary rock?		Rock A
24. What is the name of that sedimentary rock?		Conglomerate
25. Which rock is an example of an extrusive igneous rock?		Rock C
26. Which rock is an example of a metamorphic rock?		Rock B
27. Which rock could be an example of granite?		Rock D

<p style="text-align: center;">Test A</p>  <p style="text-align: center;">Test B</p> 	<p>Breakage Pattern (cleavage/fracture)</p>
<p>28. Mineral test A is testing....</p> <p>29. Mineral test B is testing...</p>	<p>Streak</p>
	<p>4.6 billion years ago</p>
<p>30. How long ago did the Precambrian Eon begin?</p>	
<p>31. How many millions of years ago did the Paleozoic Era begin?</p>	<p>approx 550 million years ago</p>
<p>32. What event marked the boundary between the Mesozoic and the Cenozoic?</p>	<p>Mass extinction of dinosaurs, ammonoids, etc.</p>
<p>33. List the Periods that make up the Mesozoic from most recent to most ancient.</p>	<p>Cretaceous = recent Jurassic Triassic = ancient</p>



No – they were originally deposited flat and horizontally and were then folded.

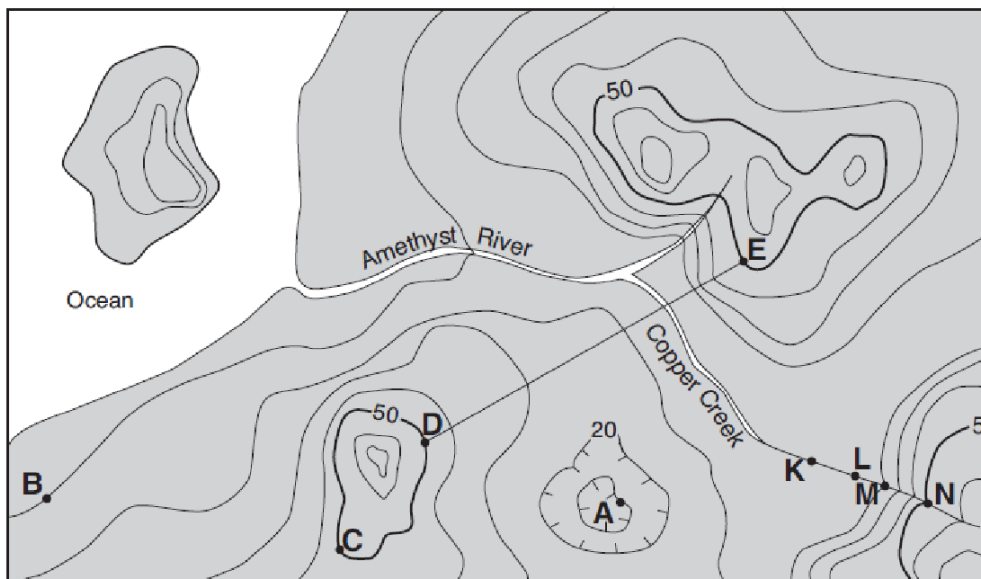
34. Were the rock units formed in this pattern?

35. What kind of tectonic forces could produce a landscape like this?

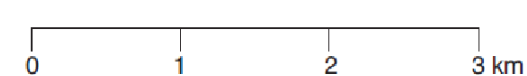
convergence

36. Were these rock units folded, faulted, or tilted?

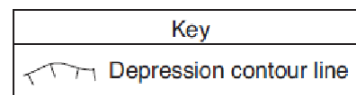
folded



The gradient of the land is steeper (contour lines are closer together)



Contour interval = 10 meters



37. How do you know copper creek is flowing faster between points N & M, than between points L & K?

38. What is the elevation for point A?

10 m

39. What is the highest possible elevation for the island in the NW corner of the map?

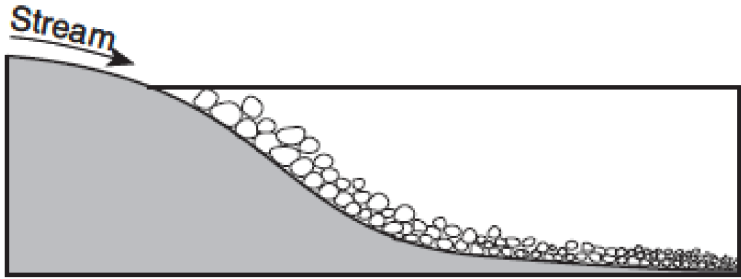
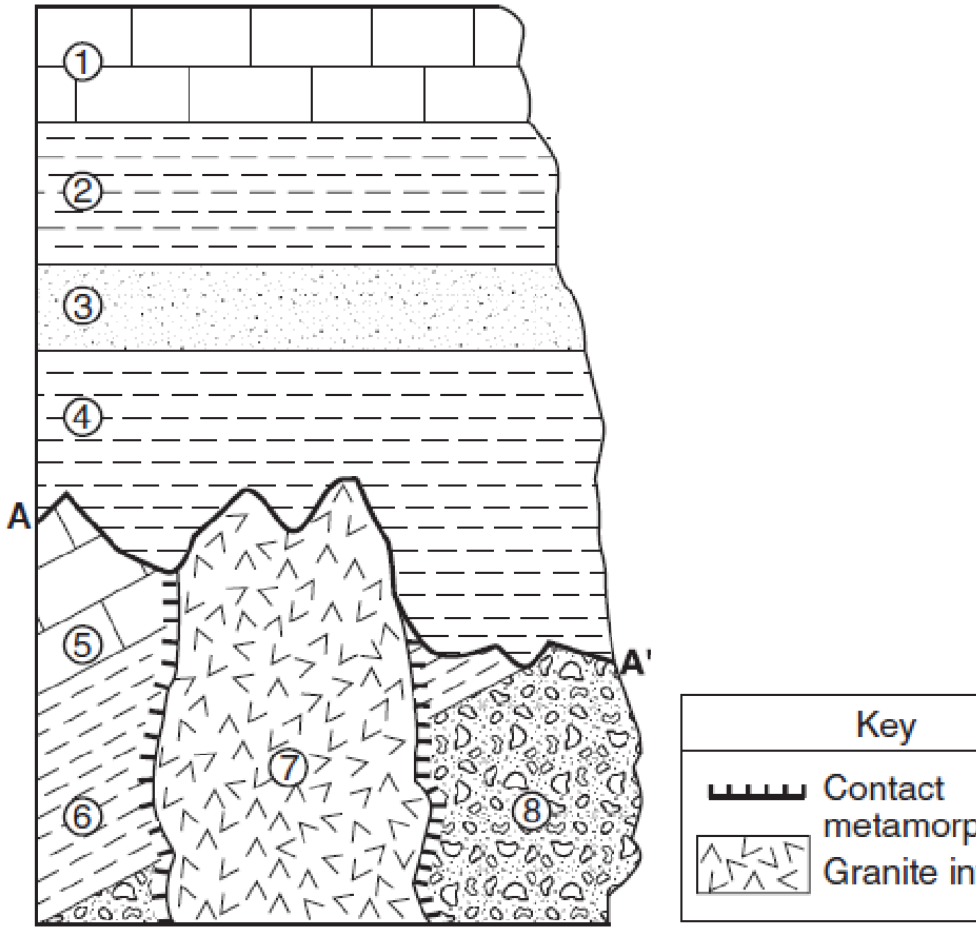
29 meters

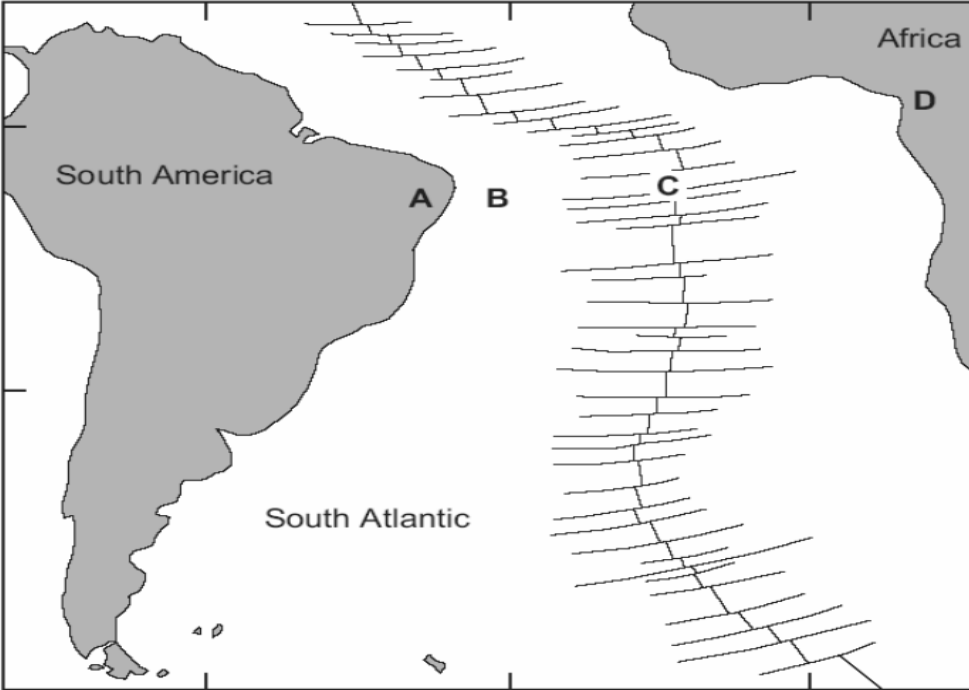

40. What is the distance between points D & E?

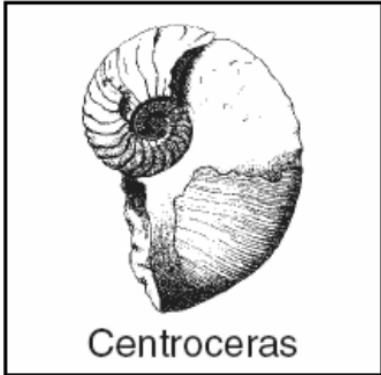
2.5km

41. Calculate the gradient between points B & C.

$(50 - 50\text{m}) / 2.5\text{km} = 0 \text{ m/km}$

 <p>42. Why are the sediments sorted as shown in the diagram?</p>	<p>The velocity of the stream decreased, so the biggest particles were dropped first and the smallest particles dropped last.</p>
<p>43. If the size of the sediment at point “A” is 0.02 centimeters, how fast was the current there?</p>	<p>1 cm/sec</p>
 <p>44. List the eight rock units in order from oldest to youngest</p> <p>45. What is line A – A’ called?</p> <p>46. What kind of rock would be found at point A?</p>	<p>Youngest: 1</p> <p>2</p> <p>3</p> <p>4 (no contact metamorphism on top of 7)</p> <p>7</p> <p>5</p> <p>6</p> <p>Oldest: 8</p>
<p>47. If layer #4 was formed during the Ordovician, which trilobite index fossil might be found within that rock unit?</p>	<p>Cryptolythus</p>

	<p>Age of rock A is older than the age of rock C.</p> <p>new rock is being created at C.</p>
<p>53. How does the age of B compare to C?</p>	
<p>54. How does the density of A compare to B?</p>	<p>A is less dense than B</p>
<p>55. What type of boundary is C?</p>	<p>divergent</p>
<p>56. What is the name of location C?</p>	<p>mid ocean ridge</p>
<p>Sample before decay</p> 	<p>11,400 yrs</p>
<p>57. If the half life above is 5700 years, how many years have gone by?</p>	
<p>58. In the example above, what percentage of original sample is left?</p>	<p>25%</p>
<p>59. What isotope is used to date young, organic material?</p>	<p>carbon 14</p>
	<p>Devonian</p>



Centroceras

60. What geologic period is this fossil from?

61. Name another fossil found in the same bedrock.

Any of the following fossils:

Phacops,
Manticoceras,
Ctenocrinus,
Stylonurus,
Aneurophyton,
Naples Tree,
Bothriolepis,
Pleurodictyum,
Platyceras,
Mucrospirifer