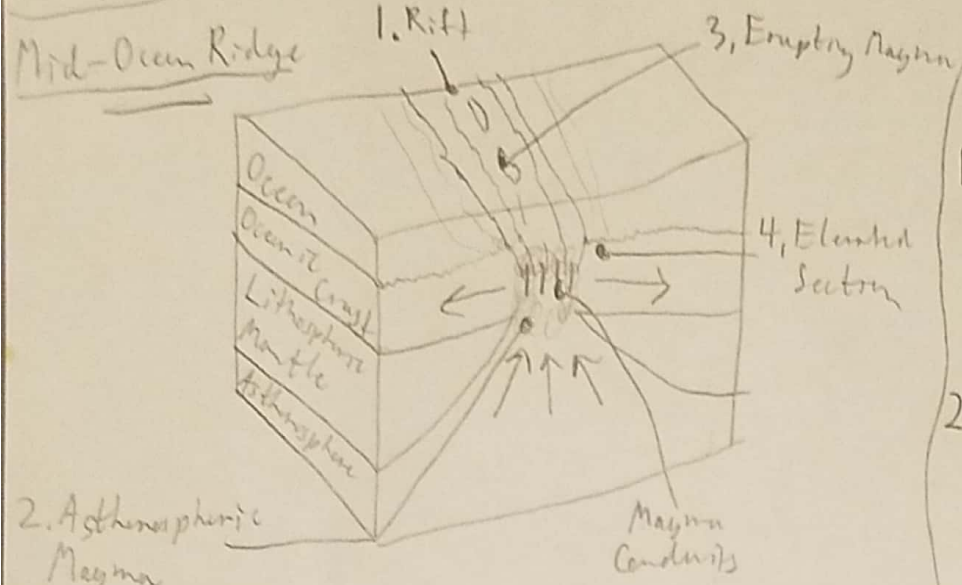


Question: Sketch, label, and explain an oceanic divergent boundary (mid-ocean ridge) (5, 6A). In addition, sketch, label, and explain how continental drifting can lead to the formation of a new ocean basin.

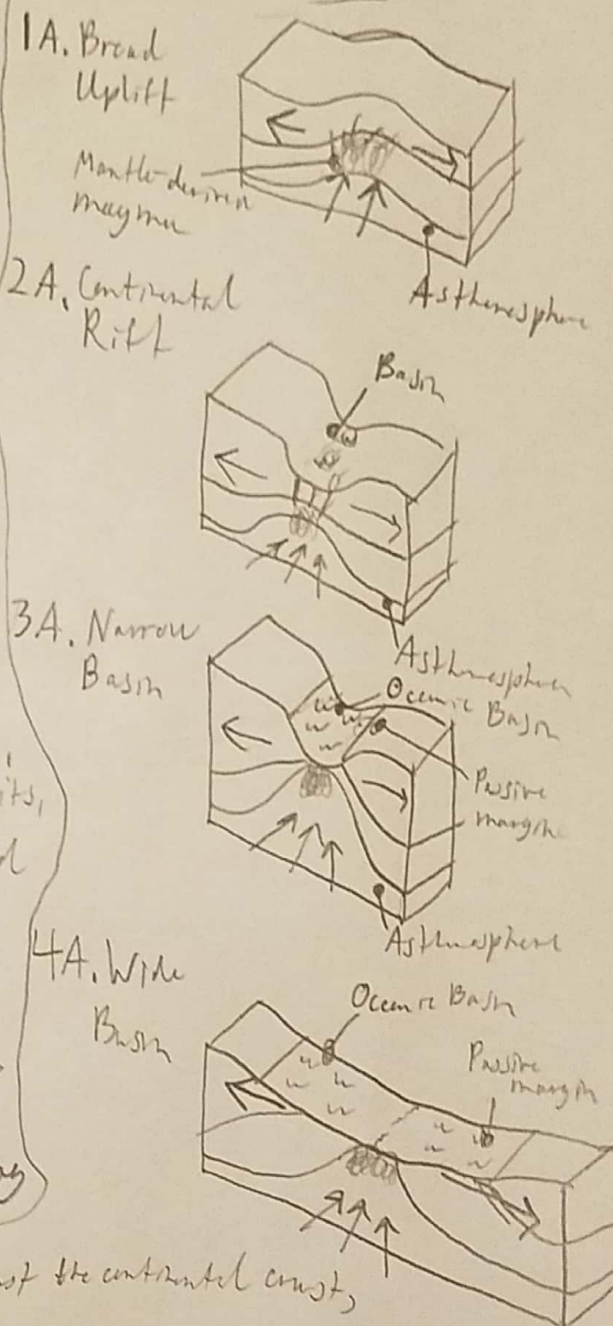


2. Asthenospheric Magma: Rises toward surface as pushing plates reduce overhead pressure and allow for partial melting. Becomes part of lithosphere as magma collects in rift conduits.

3. Erupting Magma: Cools and solidifies, forming lava flows and adding new ocean crust to spreading plates.

4. Elevated Section: Relatively high elevation the result of less dense ridge materials, like magma, as well as a thinner lithosphere close to the ridge, allowing rising asthenosphere to lift everything higher. Lower elevation away from the ridge is the result of contracted cooler rocks and merging of cooling asthenosphere with dense lithosphere.

Continental Rifting Process



1A. Broad Uplift: Result of magma rising from mantle pushing up against the continental crust, causing partial melting, crust expansion, and more uplift.

2A. Continental Rift: Continuous crust expansion causes crustal blocks to fall onto faults, creating a continental rift. Basins also form as faults produce low areas. As crust continues to stretch and thin, the basin elevations continue to lower.

3A. Narrow Basin: Continent eventually splits in two as ocean water fills the basin. Edges of continents become passive margins that lack tectonic activity.

4A. Wide Basin: Sea floor spreading thoroughly separates the two continents with a wide oceanic basin. An ocean is formed between the two continents.