

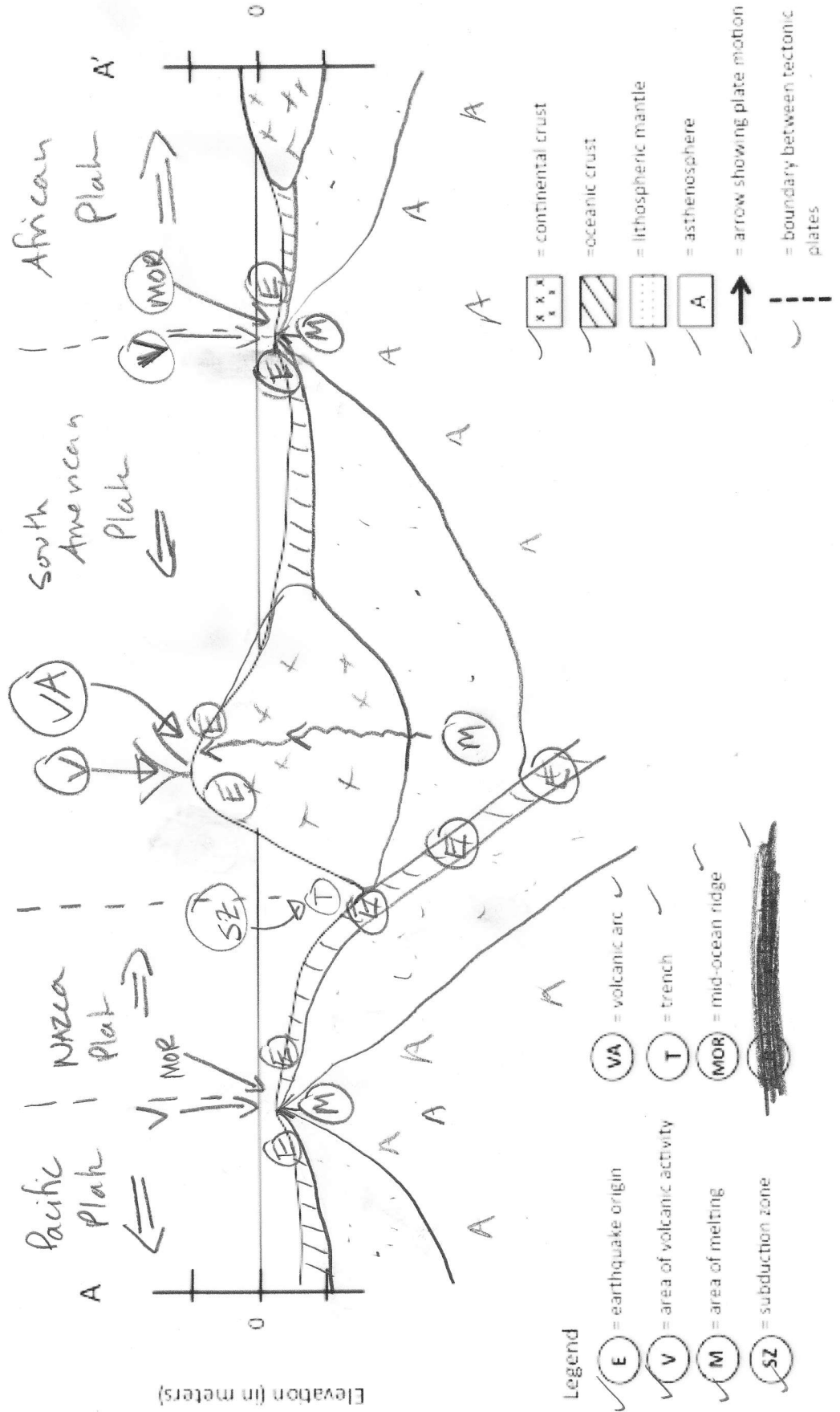
GLGY201 Learning Assessment #1: Plate Tectonics

Last Name: ANSWER KEY

First Name: _____

ID: _____

Part 1



Part 2: Answer the following questions:

1. What geologic and geophysical evidence support your location of divergent boundaries (i.e. Mid-ocean ridges) and convergent boundaries (i.e. subduction zones)? You can use point form

Evidence for divergent boundaries	Evidence for convergent boundaries
<p><i>Using the reference maps:</i></p> <ul style="list-style-type: none">- <i>Shallow focus earthquake activity associated with divergent boundary</i>- <i>presence of ridge in ocean basin (Pacific and Atlantic)</i>- <i>age of ocean crust (young at ridge / divergent boundary)</i>- <i>volcanic activity at divergent boundary</i>- <i>high heat flow coincident with the ocean ridge</i>	<p><i>Using reference maps:</i></p> <ul style="list-style-type: none">- <i>presence of trench at western edge of South America</i>- <i>earthquake activity at trench and along continent</i>- <i>volcanic activity in the form of a volcanic arc (chain of volcanoes along South America)</i>

2. Focusing on the plates in the cross-section you have just drawn answer the following question. If the spreading along the divergent boundary in the Atlantic Ocean were to stop, but the other plate boundaries continued to be active what would happen over the course of 100 Ma?

There are a number of plausible scenarios:

- 1. The Atlantic Ocean would eventually close and South America and Africa would collide forming a collision zone and subsequent mountain belt. For that to happen a subduction zone would be initiated along one (or both?) of the continental margins of South America or Africa to consume the oceanic crust and close this basin. The continents would collide (South America and Africa) and create a collisional boundary and mountain belt.***
- 2. The South American Plate and African Plate would become a large tectonic plate that would move westward away from the divergent plate boundary in the Indian Ocean. Subduction continues along the western edge of South America.***