Year 12 Science: Earthquakes and volcanoes in Aotearoa

Name: _____ Date: _____

Try these without your notes first, then check the answer key.

Practice

1. Which plate subducts under the North Island, and what type of crust is it?

2. What lowers the melting point of the mantle above a subducting plate?

3. A magnitude 6.2 and a magnitude 7.2 earthquake: roughly how many times more energy does the bigger one release?

4. What is the epicentre of an earthquake?

5. Which magma has the most silica, and what kind of volcano does it build?

Exam-style question: Ruapehu

Ruapehu is an andesitic stratovolcano in the central North Island, inland from the Hikurangi subduction zone. Its eruptions alternate between ash eruptions and short lava flows.

6. Name the two plates involved and the type of crust each is made of.

7. Explain how tectonic processes form the magma that feeds Ruapehu.

8. Explain how andesitic magma produces a steep, layered cone.

9. A shallow magnitude 6 earthquake and a deep magnitude 6 earthquake happen under the central North Island. Explain which one is more likely to damage buildings near the epicentre.

Fix the mistake

10. Correct this statement: "The Pacific Plate melts because of friction as it rubs against the Australian Plate."

11. Correct this statement: "The epicentre is where the earthquake happens underground."

12. Correct this statement: "A magnitude 7 is a bit bigger than a magnitude 6."

13. Correct this statement: "Andesite volcanoes are steep because the lava is hot and flows fast."