Year 13 Science: Planning and running an independent ESS investigation

Name: _____ Date: _____

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

Practice

1. Four repeats gave rises of 6.4, 6.6, 9.8 and 6.5 °C, and the notes say the lamp was bumped closer in the third run. Find the mean.

2. Using Aroha's line, rise = 8.4 sin θ °C, predict the rise at 50°.

3. What is the Sun's noon elevation at Invercargill (46.4° S) at an equinox?

4. Auckland is at 36.8° S. Find the noon elevations at the two solstices and how many times more energy per m² the summer Sun delivers.

5. A student increases the repeats at each angle from 3 to 5. Does this mainly improve reliability or validity?

Fix the mistake

6. Correct this statement: "Doing more repeats makes my data more valid."

7. Correct this statement: "I left out the 9.0 °C reading because it did not fit my hypothesis."

8. Correct this statement: "My conclusion is that the angle of light causes the seasons."

9. Correct this statement: "My evaluation: I could have done it more carefully."