

Exercise 1. Write a Frey curve for

$$2^x = 3^y + 5^z, \quad x \geq 5,$$

and solve completely. (**Hint:** do not level lower!).

Exercise 2. Using the recipes in Section 13.2, write down a Frey curve for

$$u^2 + 25 = v^{23}.$$

Use Kraus to show it does not have any solutions.

Exercise 3. Using the recipes in Section 13.2, write down a Frey curve for

$$u^2 + 5 = v^p, \quad p \text{ prime, } p \geq 7.$$

Show that it does not have any solutions (Hint: consider $\ell = 3$). Can you solve for $p = 3, 5$?