Exercise 1. Find three rational solutions of $Y^2 - X^3 = 2$ with $Y \geq 0$.

Exercise 2. Show that $G_{10} = cG_4G_6$, $c = \frac{\zeta(10)}{2\zeta(4)\zeta(6)}$ (this constant equals $5/11$).

Exercise 3. Find all modular forms $f \in M_k$ with no zeros except at infinity.

Exercise 4. Find all the zeros of the Eisenstein series G_{14}.