Jacobi Symbol

Project on the Jacobi Symbol, the composite analogue of the Legendre Symbol.

Exploration 1 Problem 1.1 *Strayer Chapter 4, Exercise 37.*

Rubric. 4 points if individual, 3 points if pair.

Problem 1.2 *Strayer Chapter 4, Student Project 6.*

Rubric. 4 points if individual, 3 points if pair.

Problem 1.3 *Strayer Chapter 4, Exercise 38 parts (a) through (e)*

For part (e) in addition to the hints in Strayer, it may help to use that

$$\begin{aligned} p^k &= (1+(p-1))^k \\ &= 1 + (p-1) + \frac{k!}{(k-2)!2!}(p-1)^2 + \frac{k!}{(k-3)!3!}(p-1)^3 + \cdots + \frac{k!}{(k-1)!1!}(p-1)^{k-1} + (p-1)^k \end{aligned}$$

Rubric. Parts (a)-(c) 4 points if individual, 3 points if pair. Part (d) 4 points if individual, 3 points if pair. Part (e) 4 points.

Problem 1.4 *(If presenting as a pair) Strayer Chapter 4, Exercise 38 part (f)*

Rubric. 4 points.

Learning outcomes:
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