1084 d. Dokazati da je za sve prirodne brojeve n ≥ 0 : $17 \mid 6^{2n} + 19^n - 2^{n+1}$

Za n = 1

$$17 \mid 6^2 + 19^1 - 2^{1+1}$$
$$17 \mid 36 + 19 - 2^2$$
$$17 \mid 36 + 19 - 2^2$$
$$17 \mid 51$$

Pretpostavka da za n = k , $17 \mid 6^{2k} + 19^k - 2^{k+1}$

Za n = k+1

$$17 \mid 6^{2(k+1)} + 19^{k+1} - 2^{k+1+1}$$

$$17 \mid 6^{2k+2} + 19^{k+1} - 2^{k+2}$$

$$17 \mid 36 \cdot 6^{2k} + 19 \cdot 19^k - 2 \cdot 2^{k+1}$$

$$17 \mid 36 \cdot 6^{2k} - 17 \cdot 6^{2k} + 17 \cdot 6^{2k} + 19 \cdot 19^k - 2 \cdot 2^{k+1} + 19 \cdot 2^{k+1} - 19 \cdot 2^{k+1}$$

$$17 \mid 36 \cdot 6^{2k} - 17 \cdot 6^{2k} + 19 \cdot 19^k - 19 \cdot 2^{k+1} + 17 \cdot 6^{2k} - 2 \cdot 2^{k+1} + 19 \cdot 2^{k+1}$$

$$17 \mid 19 \cdot 6^{2k} + 19 \cdot 19^k - 19 \cdot 2^{k+1} + 17 \cdot 6^{2k} + 17 \cdot 2^{k+1}$$

$$17 \mid 19 \cdot \left(6^{2k} + 19^k - 2^{k+1}\right) + 17 \cdot \left(6^{2k} + 2^{k+1}\right)$$

$$17 \mid 19 \cdot \left(6^{2k} + 19^k - 2^{k+1}\right) \wedge 17 \mid 17 \cdot \left(6^{2k} + 2^{k+1}\right)$$
