1084 a. Dokazati da je za sve prirodne brojeve $n \geq 0$: $3 \mid 5^n + 2^{n+1}$

Za n = 1

$$3 \mid 5^1 + 2^{1+1}$$
$$3 \mid 5^1 + 2^2$$
$$3 \mid 9$$

Pretpostavka da za n = k , $3 \mid 5^k + 2^{k+1}$

Za n = k+1

$$3 \mid 5^{k+1} + 2^{k+1+1}$$
$$3 \mid 5^{k+1} + 2^{k+2}$$
$$3 \mid 5 \cdot 5^k + 2 \cdot 2^{k+1}$$

I način

$$3 \mid 3 \cdot 5^k + 2 \cdot 5^k + 2 \cdot 2^{k+1}$$
$$3 \mid 3 \cdot 5^k + 2 \cdot \left(5^k + 2^{k+1}\right)$$
$$3 \mid 3 \cdot 5^k \quad \text{i} \quad 3 \mid 2 \cdot \left(5^k + 2^{k+1}\right) \quad (\text{ pretpostavka})$$

II način

$$3 \mid 5 \cdot 5^k + 5 \cdot 2^{k+1} - 3 \cdot 2^{k+1}$$
$$3 \mid 5 \cdot \left(5^k + 2^{k+1}\right) - 3 \cdot 2^{k+1}$$
$$3 \mid 5 \cdot \left(5^k + 2^{k+1}\right) \quad \text{i} \quad 3 \mid 3 \cdot 2^{k+1}$$