$7^x \equiv 25 \pmod{41}$

$a \quad b \quad p$

$p-1 = 40 = 2^3 \cdot 5^1$

p-ul $q=2$, $\alpha = 3$

$b^{\frac{p-1}{q}} \equiv a^{\frac{p-1}{q} \cdot x_0} \pmod p$

$b_i = b_{i-1} \cdot a^{-x_{i-1} \cdot q^{i-1}}$

$(a^{\frac{p-1}{q}})^{x_i} \equiv b_i^{\frac{p-1}{q^{i+1}}}$

q_i \ i	0	1	2	3
2	1	40	1	40
5	1	37		

$x_0: 7^{20x_0} \equiv 25^{20} \equiv 1 \Rightarrow x_0 = 0$

$b_1 = 25 \cdot 7^{-0 \cdot 2^0} \equiv 25$

$x_1: 7^{20x_1} \equiv 25^{40/4} \equiv 25^{10} \equiv 1 \Rightarrow x_1 = 0$

$b_2 = 25 \cdot 7^{-0 \cdot 2^1} = 25$

$x_2: 7^{20x_2} \equiv 25^{40/8} \equiv 25^5 \equiv 40 \Rightarrow x_2 = 1$

$\Rightarrow x \equiv 0 \cdot 2^0 + 0 \cdot 2^1 + 1 \cdot 2^2 \pmod 8 \equiv \boxed{4 \bmod 8}$

p-ul $q=5$, $\alpha = 1$

$x_0: 7^{8x_0} \equiv 25^8 \equiv 37 \Rightarrow x_0 = 1$

$\Rightarrow x \equiv x_0 \cdot 5^0 \equiv 1 \cdot 5^0 \equiv \boxed{1 \bmod 5}$

$\Rightarrow \begin{cases} x \equiv 4 \pmod 8 \\ x \equiv 1 \pmod 5 \end{cases} \Rightarrow x \equiv 36 \pmod{41}$

Ombem: $x = 36$