Q1)

The verification procedure works by the following argument. Assume that the signature is valid. As $s \equiv k\text{-}1(m - zr) \pmod{p - 1}$, we have $sk \equiv (m - zr) \pmod{p - 1}$ and hence $m \equiv sk + zr \pmod{p - 1}$. Therefore by Fermat's little theorem, that a congruence mod p – 1 in the exponent yields a congruence mod p overall, we have:

$v2 \equiv \alpha m \equiv \alpha sk+zr \equiv \alpha sk \times \alpha zr \equiv \beta rrs \equiv v1 \pmod{p}$

Q2)