1.22 Theorem. If a natural number is divisible by 3, then, when expressed in base 10, the sum of its digits is divisible by 3.

Proof. Let $n \in \mathbb{N}$ be given such that n is divisible by 3. Since $3 \mid n$, $n \equiv 0 \pmod 3$. By Thm 1.21, $n \equiv m \pmod 3$ where $m =$ (sum of n's digits). By Thm 1.10, $m \equiv n \pmod 3$. Since $n \equiv 0 \pmod 3$, $m \equiv 0 \pmod 3$ by Thm 1.11. Thus, the sum of its digits is divisible by 3. $\square$