1) generators.

Suppose $G$ has no non-trivial proper subgroups.

Suppose $G \neq \mathbb{Z}$, let $g \in G \setminus \{e\}$, then $\langle g \rangle$ is a non-trivial subgroup of $G$, so $\langle g \rangle = G$, so $G$ is cyclic.

(either $\mathbb{Z}$ or $C_n$ for some $n$.)

$G \neq \mathbb{Z}$ since $2\mathbb{Z} \subset \mathbb{Z}$ is a . . .

Suppose if $G = C_n$, $n$ composite, then $\langle g \rangle$ is a subgroup of $G$ of order $\nu | a$ for any $\alpha | n$.