Non-Collected Problems:

1. Fill in the details of Gauss's divisibility lemma.
2. Determine if the following are Gaussian prime numbers, if not factor them into non-units.
   (a) $5 + 3i$
   (b) $7 + 0i$
   (c) $1 - i$
   (d) $4 + i$
   (e) $2 + 4i$
   (f) $4 - 5i$
3. For each of the following find a Gaussian prime that satisfies the conditions or explain why not such prime exists.
   (a) $N(\pi) = 25$
   (b) $N(\pi) = 125$
   (c) $N(\pi) = 2$
   (d) $N(\pi) = 17$
   (e) $N(\pi) = 49$
4. Characterize all $k \in \mathbb{N}$ such that $N(\pi) = k$ for some Gaussian prime π.