

QUIZ 1

Math 145, Abstract Algebra, Duchin

*The grading of this quiz will focus on clear argumentation.*

(a) Clearly prove that  $b \mid a, b \mid (a + c) \implies c \in b\mathbb{Z}$ .

(b) If  $a = 120$  and  $b = 4$ , does  $b \mid a$ ? Does  $2b \mid a$ ?

(c) Show that  $b \mid a \not\Rightarrow 2b \mid a$ . Clearly explain the logic of your answer.