

Name:

Problem 1: *Remind yourself of the Division Algorithm (Theorem 2 of the book). If $a = 75$ and $b = 24$, what are the unique q and r such that*

$$a = bq + r,$$

and

$$0 \leq r < b?$$

Solution: We have

$$75 = 3 \cdot 24 + 3,$$

and since

$$0 \leq 3 < 24,$$

we have that $q = 3$ and $r = 3$, and those are guaranteed to be unique by the Division Algorithm Theorem.