Mathematics 300

Quiz 19 **Name:** Key

You must show your work to get full credit.

1. State the ***division algorithm***.

For all integers a, b with $b > 0$, there exist unique integers q, r such that $a = qb + r$ and $0 \le r < b$.

2. What are the quotient and remainder when $a = 17$ is divided by $b = 5$?

$q =$ 3 $r =$ 2

$17 = 3(5) + 2$ so $q = 3$, $r = 2$

3. What are the quotient and remainder when $a = -17$ is divided by $b = 5$?

$q =$ -4 $r =$ 3

$-17 = -4(5) + 3$ so $q = -4$, $r = 3$