1. Find the quotient $q$ and the remainder $r$ when 2000 is divided by 17.

Solution:

*2. Show that the square of any integer $a$ is of the form $3k$ or of the form $3k + 1$ for some integer $k$. [Hint: By the Division Algorithm, $a$ must be of the form $3q$ or $3q + 1$ or $3q + 2$.]

Solution:

3. Prove that the cube of any integer $a$ the form $9k$ or $9k + 1$ or $9k + 8$.

Solution: