$\forall x \in \mathbb{R}: [(x^2 \text{ is divisible by } 3) \Rightarrow (x \text{ is divisible by } 3)]$

Contrapositive

$\forall x \in \mathbb{Z}: (x \text{ not div. } 3) \Rightarrow (x^2 \text{ not div } 3)$

Let $x \in \mathbb{Z}$ and assume $x = 3k+1$

$x^2 = x \cdot x$

$= (3k+1)(3k+1)$

Since neither term is divisible by 3, neither x^2 is divisible by 3

This is correct, but I also need to consider $3k+2$ and prove it with that as well