Quiz 8   Name:_____ Key_____

You must show your work to get full credit.

For the following write the statement as an English sentence. Say if it is true or false.

1. $\forall x \in \mathbb{R}, x^2 + 3 > 1$.
English version:

For every real number x, $x^2 + 3 > 1$.

True or False? ___True___

2. $\forall a \in \mathbb{R}, \exists x \in \mathbb{R}, 2x + 1 = a$.
English version:

For every real number a there is a real number x
with $2x + 1 = a$
or   For every real number a we can solve
     $2x + 1 = a$ for x

True or False? ___True___

3. $\exists x \in \mathbb{R}, \forall a \in \mathbb{R}, 2x + 1 = a$.
English version:

There is a real number x such that for all real
numbers a $2x + 1 = a$.

or There is a real number x
such that for all a True or False? ___False___
x is a solution to $2x + 1 = a$