MA383 Foundations in Mathematics
Lesson 5: Practice with Quantifiers

For each of the following statements, determine if it has any universal or existential quantifiers. If it does, re-write the sentence using $\forall$ or $\exists$, and introduce variables where necessary.

1. The area of a rectangle is its length times its height.

2. $8 - 8 = 0$

3. The sum of an even integer and an odd integer is odd.

4. For every even integer, there is an odd integer such that the sum of the two is odd.

5. All positive real numbers have a square root.

6. $x^2 - x + 7 = 0$ for some real number x.