For this lab, we are going to ask you to express several different important properties of addition and multiplication of real numbers using quantifiers.

- (a) Use quantifiers to express the closure property of addition (when you add two real numbers the sum is also a real number).
- (b) Use quantifiers to express the commutative property of addition.
- (c) Use quantifiers to express the associative property of addition.
- (d) Use quantifiers to express the fact that there is an additive identity for real numbers. (An additive identity is a number you can add to any other number without changing the value.)
- (e) Use quantifiers to express the fact that there is an additive inverse for real numbers. (An additive inverse of a number is a number you can add to it so that the resulting sum is equal to the additive identity.)
- (f) Use quantifiers to express the closure property of multiplication.
- (g) Use quantifiers to express (both) distributive properties.
- (h) Use quantifiers to express the commutative property of multiplication.
- (i) Use quantifiers to express the associative property of multiplication.
- (j) Use quantifiers to express the fact that there is a multiplicative identity.
- (k) Use quantifiers to express the fact that every real number other than the additive identity has a multiplicative inverse.