Quiz 1 Solutions
MATH 1A Fall 2015

10 September 2015

Exercise 1.1. Prove
$$\lim_{x \to 6} \frac{x}{2} = 3.$$

Proof. Let $\varepsilon > 0$. Set $\delta = 2\varepsilon$.

Suppose $0 < |x - 6| < \delta$. Then

$$\left| \frac{x}{2} - 3 \right| = \frac{1}{2}|x - 6| < \frac{1}{2}\delta = \frac{1}{2} \cdot 2\varepsilon = \varepsilon.$$

Thus for every $\varepsilon > 0$ there is a $\delta > 0$, namely $\delta = 2\varepsilon$, such that if $0 < |x - 6| < \varepsilon$ then $\left| \frac{x}{2} - 3 \right| < \varepsilon$. This proves $\lim_{x \to 6} \frac{x}{2} = 3$. $\square$

Exercise 1.2. Write down the truth table for the statement "(not P) and Q".

Solution.

		P	
		T	F
	T	F	T
Q			
	F	F	F

$\square$