



Quiz # 1  
 Math 101-Section 06 Calculus I  
 9 February, 2018, Friday  
 Instructor: Ali Sinan Sertöz  
**Solution Key**



Bilkent University

Name: .....

Department: .....

Student ID: .....

**Q-1)** Let  $f(x) = \begin{cases} \sin \frac{1}{x} & x < 0 \\ 0 & x = 0 \\ x \sin \frac{1}{x} & 0 < x < 1 \\ [x] + [-x] & 1 \leq x < 2 \\ x^2 & 2 \leq x < 3 \\ 10 & x = 3 \\ 5x - 6 & x > 3 \end{cases}$

Fill in the following boxes if the required number exists; otherwise put a cross in the box.

$$\lim_{x \rightarrow 0^-} f(x) = \boxed{\times}$$

$$\lim_{x \rightarrow 0^+} f(x) = \boxed{0}$$

$$\lim_{x \rightarrow 0} f(x) = \boxed{\times}$$

$$\lim_{x \rightarrow 1} f(x) = \boxed{\times}$$

$$\lim_{x \rightarrow 2^-} f(x) = \boxed{-1}$$

$$\lim_{x \rightarrow 2^+} f(x) = \boxed{4}$$

$$\lim_{x \rightarrow 2} f(x) = \boxed{\times}$$

$$\lim_{x \rightarrow 3^-} f(x) = \boxed{9}$$

$$\lim_{x \rightarrow 3^+} f(x) = \boxed{9}$$

$$\lim_{x \rightarrow 3} f(x) = \boxed{9}$$