Math 101 **Quiz#1** **Term: 171** **October 5, 2017**

Please show **all** your work! Answers without supporting work will not be given credit.
Write answers in spaces provided.

Name: **Serial:**
Section:

1. Calculate the following limits. Make sure you show all your work and justify all your answers.

   (a) $\lim_{x\to 0} \dfrac{\sin^2 x}{\cos x - 1}$

   Answer:_____

   (b) $\lim_{x\to 1} \dfrac{\sqrt{2-x^3}-1}{\sqrt{2x}-\sqrt{2}}$

   Answer:_____

(c) $\lim_{x\to 1} f(x)$, if $x^3 - x + 4 \leq x + f(x) \leq 3x^2 + 1$, for all real numbers x.

Answer:_____

2. Let $f(x) = 5x + 2$. Find the largest value of δ such that $|f(x) - 12| < 0.01$, whenever $|x - 2| < \delta$.

Answer:_____

3. Let

$$f(x) = \begin{cases} \dfrac{|x^2 + 2x - 3|}{x^2 + x - 2}, & \text{if } x \neq 1 \\ 2, & \text{if } x = 1 \end{cases}$$

is f continuous at $a = 1$? Explain.

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The End.