Quiz # 5
Math 101-Section **01** Calculus I
3 November 2017, Friday
Instructor: Ali Sinan Sertöz
**Solution Key**

Bilkent University

Your Name: .....

Your Student ID: .....

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**Q-1)** Consider the function $f(x) = \dfrac{x^2+1}{x+1}$.

Fill in the following boxes if the required information exists; otherwise put a cross $\times$ in the box.
(Each correct answer is 1 point each. The plot is 2 points.)

Horizontal asymptote is $y =$ $\times$. Vertical asymptote is $x =$ $-1$.

Slant asymptote is $y =$ $1$ $x +$ $-1$

Local minimum is at $x =$ $-1+\sqrt{2}$. Local maximum is at $x =$ $-1-\sqrt{2}$

The graph of $y = f(x)$ is concave up on the interval $(-1, \infty)$

The graph of $y = f(x)$ is concave down on the interval $(-\infty, -1)$

Roughly sketch the graph of $y = f(x)$.