**Quiz 2 Math 382 Name:**

***Prove the following:***

1. $\sin(\left(\frac{1}{x}\right))$ is divergent at 0. (2 marks)
2. Let $f:D⟶R, c\in \hat{D}. $Then:

If $\lim\_{x⟶c^{+}}f\left(x\right)=l=\lim\_{x⟶c^{-}}f\left(x\right),$ then $\lim\_{x⟶c}f\left(x\right)=l.$ (3 marks)

**Bones:** What is the solution set of:

1. $\left|x\right|+\left|x-2\right|>6.$
2. $\left|\frac{x-5}{x^{4}+e}\right|\leq 0$.