**QUIZ 2.1 – 2.2**



1. For the function *f* shown, evaluate the following: **[4]**

 a) $\lim\_{x\to -4^{-}}f(x)$ =

 b) $\lim\_{x\to -4^{+}}f(x)$ =

 c) $\lim\_{x\to 1^{-}}f(x) $ =

 d) $\lim\_{x\to 1^{+}}f(x) $ =

e) $\lim\_{x\to 4^{-}}f(x) $ =

f) $\lim\_{x\to 4^{+}}f(x) $ =

j) $f(-4) $ =
k) $f(1) $ =
l) $f(4) $ =

g) $ \lim\_{x\to -4}f(x) $ =
h) $ \lim\_{x\to 1}f(x) $ =
i) $ \lim\_{x\to 4}f(x) $ =

1. Determine the left and right sided limits of the following function at -3. $f\left(x\right)=\left\{\begin{array}{c}\frac{x^{2}+6x+9}{2x+6}, x<-3\\-2x+5, x\geq -3\end{array}\right.$ [2]
2. Let $f$ be a function such that: $\frac{x^{2}-4}{x-2}\leq f(x)\leq \frac{8\sin((x-2))}{2x-4}$ for $1<x<3$. [2]
Determine $\lim\_{x\to 2}f(x).$
3. Evaluate each of the following limits. **Show your work for all questions. [12]**

a**.** $\lim\_{x\to 2}\frac{x^{2}+5x+6}{x-3}$ b. $\lim\_{x\to +\infty }\frac{3x^{2}-4}{x^{2}-1}$

c. $\lim\_{x\to -5^{-}}\frac{\left|5+x\right|}{x^{2}-25}$ d. $\lim\_{x\to -1^{+}}\frac{3x^{2}-4}{x^{2}-1}$

 e) $\lim\_{h\to 0}\frac{\frac{1}{3+h}-\frac{1}{3}}{h}$ f. $\lim\_{x\to 0}\frac{\sqrt{3-x}-\sqrt{3}}{x}$

g) $\lim\_{x\to \infty }\frac{x^{2}-x+1}{x^{3}+2}$ h) $\lim\_{x\to -\infty }\frac{x^{3}-x+1}{x^{2}+2} $

1. $\lim\_{x\to \infty }\frac{3x-sin3x}{x}$ j) $\lim\_{x\to 0}\frac{\sin(3x)}{\sin(x)}$