習題集 8

(對應 張旭微積分 極限篇重點八：高斯符號求極限)

1. Find $\lim_{x\to 3^+} x^2[x]$ and Find $\lim_{x\to 1^-}(5[x]-2)$

2. Evaluate $\lim_{x\to n^-}[[3x]]$.

3. Find $\lim_{x\to 1.5^-}[[3x]-[2x]]$ and $\lim_{x\to\left(\frac{2}{9}\right)^-}[x-[9x]]$.

4. Evaluate $\lim_{x\to 8^-}\dfrac{[x]^2+7}{[x]+1}$ and $\lim_{x\to 1^-}\dfrac{[x]^{10000}+3}{[x]-1}$.

5. Let $f(x)=(-1)^{[x]}$. At which points x_0 does $\lim_{x\to x_0} f(x)$ fail to exist ?

6. Let $f(x)=|x|^{[x]}$. Does $\lim_{x\to 0} f(x)$ exist ?

7. Show that $\lim_{x\to 0^+}\left(\lim_{y\to 0^+} x^{[y]}\right)=1$

8. Find $\lim_{x\to 0}\left(\lim_{y\to 0}|[x]|^{|y|}\right)$

9. Find $\lim_{x\to x_0}\sin(\pi[x])$.

10. Find $\lim_{x\to x_0}\sin(\dfrac{\pi}{2}[x])$