Problem statement a) Suppose $A$ is a positive real number and $m_A$ is the average value of $(\sin(Ax))^3$ on the interval $[0, 2]$. Compute $m_A$.

Note The answer will have several terms and will not be simple.

b) What is $\lim_{A \to \infty} m_A$?

Note This answer should be simple. Explain briefly why it is correct. You may refer to graphs of functions if that is helpful.