1. Carefully print MATHEMATICA input commands (one or two in number) for the evaluation of
\[ \lim_{x \to 0} \frac{e^{x^5} + e^{x^7} - 2 - x^5 - x^7}{x^{10}}. \]
(In particular, since palettes are not available, write \( x^5 \) for \( x^5 \) etc.)

2. For the function \( f(x) \) defined by
\[ f(x) = \frac{x^{17}e^x \sin x}{x^2 + 1}, \]
for any real number \( x \),
(a) print a suitable MATHEMATICA Input statement whose evaluation defines this function for the MATHEMATICA kernel;

(b) carefully print a MATHEMATICA Input statement for the direct evaluation of
\[ \lim_{h \to 0} \frac{f(a + h) - f(a)}{h}; \]

(c) carefully print a MATHEMATICA Input statement whose evaluation yields the seventeenth derivative \( f^{(17)}(x) \) of \( f(x) \).

(End of Quiz)