1. (5 pts) Consider the graph of \( f \) shown below. Note: \( f \) consists of a semi-circle and straight line segments.

(a) Shade the appropriate area on the graph to the right to represent the area determined by 
\[
\int_{1}^{4} f(x) \, dx.
\]

(b) Find the exact value of \( \int_{1}^{4} f(x) \, dx \).

2. (5 pts) Consider \( \int_{0}^{1.5} \cos x \, dx \).

(a) Annotate the graph of \( f(x) = \cos x \) to show the area represented by the sum \( M_3 \). Be sure to shade the desired area.

(b) Find \( M_3 \).