Foundations of Computer Science

Give an example of an ML function belonging to each of the following complexity classes:

(a) $O(1)$;
(b) $O(n)$;
(c) $O(n \log n)$;
(d) $O(n^2)$;
(e) $O(2^n)$.

Each answer may contain code fragments (involving well-known functions) rather than self-contained programs, but must include justification. (The upper bound in each case should be reasonably tight.)

[2 marks each]