Brief answer to selected problems in Homework 14

1. Section 7.4

   Problem 8: Note that $\ln 2 < 1$. Answer (from slow to fast growth): $(\ln 2)^x$, x^2, $2^x \approx e^x$.

   Problem 10: a. True, b. True, c. False, d. True, e. True, f. True, g. True, h. False.

   Problem 24: Answer (from slow to fast growth): $(\log_2 n)^2$, $\sqrt{n} \log_2 n$, n. The slower growth rate, the more efficient.

2. Section 8.1:

   Problem 65: Define $F(x) = \int_x^b f(t)dt$. It follows that $F(b) = 0$, $F'(x) = -f(x)$. Then apply integration by parts to $\int_a^b F(x)dx$.