Quiz 5

MATH 139-01 and -02
Tuesday, September 16, 2003

Be sure to **show your work**. Unsupported answers receive no credit.

1. Recall that if P dollars are invested at an annual interest rate of r for t years, compounding n times per year, then the balance after t years is

$$B(t) = P\left(1 + \frac{r}{n}\right)^{nt}.$$

   (a) If $P = \$250$, $r = 0.08$, and interest is compounded monthly, what is the balance after 40 years?

   (b) If $P = \$250$, $r = 0.08$, and interest is compounded daily, what is the balance after 40 years?

   (c) How much more interest is earned if it is compounded daily rather than monthly?

   (d) How long must one wait before the balance reaches \$10,000?