1. Solve each equation for $x$.
   (a) $45^x \cdot 4^{-x^2} = 16^{-3}$
   (b) $4^{5x-8} = 1$

2. You start an account with $1200 when the interest rate
   was 4.5% interest compounded monthly. At the end of
   the second year you deposit an additional $900 into the
   account when the bank raised the interest rate to 5.25%
   compounded monthly. What is the balance of the account
   6 years after it was started?

3. Find the domains of these functions.
   (a) $y = \log_3(2x - 5)$
   (b) $y = \log_6(5 - x)$
   (c) $y = 3\sqrt{x}$

4. Solve each equation for $x$.
   (a) $10e^{3x+5} = 50$
   (b) $\log_3(x + 2) + \log_3(2x) = 1$
   (c) $\log_3(\log_2(2x + 4)) = 1$

5. Evaluate these limits.
   (a) $\lim_{x \to 3} \frac{x^2 - 3x}{x^2 - 7x + 12} = $
   (b) $f(x) = \begin{cases} 3x^2 + 5x + 1 & \text{if } x \leq 2 \\ 7 - 3x - x^2 & \text{if } x > 2 \end{cases}$
      $\lim_{x \to -2^+} f(x) = $
   (c) $f(x) = \begin{cases} 3x^2 + 5x + 1 & \text{if } x \leq 2 \\ 7 - 3x - x^2 & \text{if } x > 2 \end{cases}$
      $\lim_{x \to -2^-} f(x) = $

For problems 6 and 7, use the graph of $f(x)$ to evaluate
these limits.

6. (a) $\lim_{x \to 4^-} f(x) = $
   (b) $\lim_{x \to 4^+} f(x) = $
   (c) $\lim_{x \to 4} f(x) = $

7. (a) $\lim_{x \to -2} f(x) = $
   (b) $\lim_{x \to -3} f(x) = $
   (c) $\lim_{x \to -3} f(x) = $