Seventh Quiz for Math 30, section 6432

Directions: You should fully justify your answers. Do all your work on separate paper, and make sure to *print* your name in the first sheet and staple all the sheets together. **Unstapled, loose pieces of paper will not be graded.** This quiz is due Wednesday April 9, at 6:00 PM.

1. Solve for x:
   (a) $10^{2-4x} = 2$
   (b) $3e^{2x-1} = 12$
   (c) $2^{2x+3} = 3^{x-1}$
   (d) $3^{2x} - 3 \cdot 3^x = 9$
   (e) $e^{4x} - 13e^{2x} + 36 = 0$
2. Solve for x:
   (a) $\log(5x) = 2$
   (b) $\log_2 \sqrt{x-1} = 1$
   (c) $\log(x-2) + \log(x+2) = 2$
   (d) $\log_3(x+3) = \log_9 x + 1$
3. Find the domain of each of the following functions:
   (a) $f(x) = \ln(x^3 + 2x^2 - 3x)$
   (b) $g(x) = \log\left(\dfrac{x^2 - 3x + 2}{x^2 + 5x + 6}\right)$