Q1 Info  
Q1: Thursday Feb 5. Covers jump discontinuities and asymptotes

Q1 Book Problems
2.2 Page 92  7, 9
2.3 Page 102  11, 15, 19, 21, 23, 27
2.6 Page 137  3, 15, 17, 19, 21, 23, 31, 47, 49

Q1 Practice
1) For the functions $f$ below,
   i) Find all vertical asymptotes.
   ii) Find a $g(x)$ to which $f(x)$ is asymptotic.
   iii) Compute the limit to show $f$ and $g$ are asymptotic.

   $a) f(x) = \frac{x^4}{x^2 - 3x + 2}  \quad b) f(x) = \frac{x^4 - x^2 - 1}{x^3 + 3x}$

   $a) \lim_{x \to -1} \frac{x^2 - x - 2}{|1 + x|}  \quad b) \lim_{x \to 2} \frac{|2 - x|}{4 - x^2}$

   $c) \lim_{x \to -1} \frac{x^2 + x}{|x + 1|}  \quad d) \lim_{x \to 2} \frac{|x - 2|}{x^2 + 2x - 8}  \quad e) \lim_{x \to 2} \frac{x^2 - 2x}{|2 - x|}$

Background
Sketch the following functions. You should avoid plotting points.

   $a) y = |x + 1|  \quad b) y = |x^2 - 1|  \quad c) y = \frac{x^2 - x - 2}{x^2 - x - 2}$

   $d) y = \frac{x^2}{|x|} = x \cdot \frac{x}{|x|}  \quad e) y = \frac{x^2 - 1}{|x - 1|}  \quad f) y = \frac{x}{|x|} \cdot \sin x$

   $g) y = x + |x|  \quad h) y = x - |x|  \quad i) y = \frac{1}{x} - \frac{1}{|x|}$

   $j) y = \frac{\sin x}{|\sin x|}$

In the Middle Ages, lords and vassals lived in a futile system.

That's "feudal" system.

Just when I thought this junk was beginning to make sense.