Homework Section 4.3 - Due 30th May

You may sketch in pencil. Draft your work if necessary.
Read the questions carefully.
Any asymptotes must be included in your graphs.

1. #8 on page 174. Give a general equation that describes *all* the asymptotes.
2. #20 on page 174. Give a general equation that describes *all* the asymptotes.
3. Graph the function $y = \tan(x)\cos^2(x) + \tan^3(x)\cos^2(x)$.
   (Hint: Use identities to simplify)
4. Graph $y = \tan(2 - x)$. Determine *all* x-intercepts and the general equation that describes *all* asymptotes.
   (Hint: odd function)
5. Without graphing, determine the period and the horizonal shift (including direction) of the following functions compared to $y = \tan(x)$:
   (a) $y = \tan(\frac{x}{3})$
   (b) $y = \tan(x - 2)$
   (c) $y = \tan(x + \frac{\pi}{2})$
   (d) $y = \tan(\frac{5}{2}x + 10)$
   (e) $y = \tan(\frac{1}{4}(x - 3))$

*5. Explain the transformations of the graph $y = \alpha\sin(\beta x + \gamma) + \delta$ where $\alpha, \beta, \gamma, \delta$ are all *positive* constants.

*6. Explain the transformations of the graph $y = \alpha\cos(\beta x + \gamma) + \delta$ where $\alpha, \beta, \gamma, \delta$ are all *negative* constants.

*Practice questions, not to be handed in.