In-Class Problems 13 for Wednesday, March 14

**These problems are from Pre-Class Problems 13.**

1. Find a polynomial $p$ of degree 4 with zeros (roots) $\frac{2}{3}$ of multiplicity 2 and $-2i$ and $2i$ each of multiplicity 1.

2. Find a polynomial $p$ of degree 3 with zeros (roots) $\frac{5}{3}$, $4 + \sqrt{5}$ and $4 - \sqrt{5}$ each of multiplicity 1.

3. Solve the following inequalities.

   a. $x^2 + 5x - 24 < 0$ b. $\frac{8 - t}{4t + 7} \leq 0$ c. $\frac{x + 2}{x^2 - 8x + 16} > 0$

4. Determine the vertical asymptotes (if any).

   a. $f(x) = \frac{x^2 - 4}{2x^2 - x - 15}$ b. $g(x) = \frac{3x^2 + 2x - 8}{x + 2}$