Worksheet 15

Chapter 5/6 Review

Problem 1. Use the definition of the limit to show that $\lim_{n\to\infty} \dfrac{n^2 + 10n - 4}{2n^2 - 2n + 4} = \dfrac{1}{2}$

Problem 2. For which values x does the Taylor series for $f(x) = \dfrac{1}{2 - x^2}$ converge to $f(x)$?

Problem 3. Using Taylor series and little-oh notation, calculate $\lim_{n\to\infty} \dfrac{e^{2x^2} - 1 - 2x^2 - 2x^4}{x^6}$

Problem 4. Given the plane defined by $x - 2y + 3z = 1$, find the distance of this plane to the origin.

Problem 5. Do the points $(1, 1, 1)$, $(1, 2, 3)$, $(-1, 1, -1)$, $(-1, 2, 1)$ form a Paralellogram? If so, find its area.