8. (10 pts) On this problem you must show your work and use exact methods. That is, calculator approximations are insufficient.

Find two values of x for which

$$x^2 - \frac{x^6}{3!} + \frac{x^{10}}{5!} - \frac{x^{14}}{7!} + \frac{x^{18}}{9!} - \frac{x^{22}}{11!} + \ldots = 1.$$