Section 1: Finding and using Maclaurin series

Exercise level 3

1. (i) Find the power series for $\cos(x + \frac{\pi}{3})$ as far as the term in x^2.

   (ii) Find the power series for $\sec(x + \frac{\pi}{3})$ as far as the term in x^2.

   (iii) Multiply these together, neglecting terms in x^3 and higher, and comment on your result.