Let
$$f(x) = \frac{x(6-x)}{(2+x)(4+x^2)}$$
.
(i) Express $f(x)$ in partial fractions.

- (i) Express f(x) in partial fractions. [5]
- (ii) Hence obtain the expansion of f(x) in ascending powers of x, up to and including the term in x^2 . [5]