

# 3 Partial fractions and binomials – Part 1

## — Answers

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Work through these after trying the questions yourself.

**3.1** Splitting it into a sum of simpler fractions.

**3.2**  $6 = 3B$ , so  $B = 2$ .

**3.3**  $|x| < 1$ .

**3.4**  $1 + nx + \frac{n(n-1)}{2!}x^2$ .

**3.5**  $\frac{1}{2}x$  (that is,  $0.5x$ ).

**3.6** With  $n = \frac{1}{2}$  and  $x \rightarrow 2x$ :  $1 + \frac{1}{2}(2x) + \frac{\frac{1}{2}(-\frac{1}{2})}{2}(2x)^2 = 1 + x - \frac{1}{8}(4x^2) = 1 + x - \frac{1}{2}x^2$ .

Valid for  $|2x| < 1$ , i.e.  $|x| < \frac{1}{2}$ .