

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. $|x| < \frac{1}{2}$.