

9 Let $f(x) = \frac{2 + 11x - 10x^2}{(1 + 2x)(1 - 2x)(2 + x)}$.

(a) Express $f(x)$ in partial fractions.

[5]

[illegible]

- (b)** Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^2 . [5]

[illegible]

10 Let $f(x) = \frac{21 - 8x - 2x^2}{(1 + 2x)(3 - x)^2}$.

(a) Express $f(x)$ in partial fractions.

[5]

[illegible]

- (b)** Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^2 . [5]

[illegible]

10 Let $f(x) = \frac{24x + 13}{(1 - 2x)(2 + x)^2}$.

(a) Express $f(x)$ in partial fractions.

[5]

[illegible]

- (b) Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^2 . [5]

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- (c) State the set of values of x for which the expansion in (b) is valid. [1]

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9 Let $f(x) = \frac{8 + 5x + 12x^2}{(1 - x)(2 + 3x)^2}$.

(a) Express $f(x)$ in partial fractions.

[5]

This image shows a full page of a document template designed for handwriting practice or general note-taking. It consists of approximately 20 evenly spaced, horizontal dotted lines extending across the width of the page. The background is plain white, and there are no margins, headers, footers, or other markings present.

- (b)** Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^2 . [5]

[illegible]

9 Let $f(x) = \frac{14 - 3x + 2x^2}{(2 + x)(3 + x^2)}$.

(a) Express $f(x)$ in partial fractions.

[5]

[illegible]

- (b)** Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^2 .
[5]

[illegible]

10 Let $f(x) = \frac{2x^2 + 7x + 8}{(1+x)(2+x)^2}$.

(a) Express $f(x)$ in partial fractions.

[5]

This image shows a full page of a document template designed for handwriting practice or general note-taking. It consists of approximately 20 evenly spaced horizontal dotted lines across the entire width of the page. The background is plain white, and there are no margins, headers, footers, or other markings present.

- (b)** Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^2 . [5]

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

9 Let $f(x) = \frac{17x^2 - 7x + 16}{(2 + 3x^2)(2 - x)}$.

(a) Express $f(x)$ in partial fractions.

[5]

[illegible]

- (b) Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^3 . [5]

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- (c) State the set of values of x for which the expansion in (b) is valid. Give your answer in an exact form. [1]

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7 Let $f(x) = \frac{5x^2 + 8x - 3}{(x - 2)(2x^2 + 3)}$.

(a) Express $f(x)$ in partial fractions.

[5]

[illegible]

- (b)** Hence obtain the expansion of $f(x)$ in ascending powers of x , up to and including the term in x^2 . [5]

[illegible]