

3. (a) Express $\frac{5x+3}{(2x-3)(x+2)}$ in partial fractions. (3)

5.

$$f(x) = \frac{3x^2+16}{(1-3x)(2+x)^2} = \frac{A}{1-3x} + \frac{B}{2+x} + \frac{C}{(2+x)^2}, \quad |x| < \frac{1}{3}.$$

(a) Find the values of A and C and show that $B = 0$. (4)

2.
$$f(x) = \frac{3x-1}{(1-2x)^2}, \quad |x| < \frac{1}{2}.$$

Given that, for $x \neq \frac{1}{2}$, $\frac{3x-1}{(1-2x)^2} = \frac{A}{1-2x} + \frac{B}{(1-2x)^2}$, where A and B are constants,

(a) find the values of A and B . (3)

4. (a) Express $\frac{2x-1}{(x-1)(2x-3)}$ in partial fractions. (3)

4.
$$\frac{2(4x^2+1)}{(2x+1)(2x-1)} \equiv A + \frac{B}{2x+1} + \frac{C}{2x-1}.$$

(a) Find the values of the constants A , B and C . (4)

For this last one treat A as A/1