

## Section 3: Further techniques for integration

## Exercise level 1

1. (i) Express  $\frac{2}{(x+1)(x-1)}$  in partial fractions.

(ii) Hence find  $\int \frac{2}{(x+1)(x-1)} dx$ .

2. (i) Express  $\frac{4}{x^2(x-2)}$  in partial fractions.

(ii) Hence find  $\int \frac{4}{x^2(x-2)} dx$ .

3. (i) Express  $\frac{5}{(2x+1)(x+3)}$  in partial fractions.

(ii) Hence find  $\int_0^1 \frac{5}{(2x+1)(x+3)} dx$ .

4. (i) Express  $\frac{3x+5}{(x+1)(x+2)(x+3)}$  in partial fractions.

(ii) Hence find  $\int_0^2 \frac{3x+5}{(x+1)(x+2)(x+3)} dx$

5. (i) Express  $\frac{16}{(x+1)^2(x-3)}$  in partial fractions.

(ii) Hence find  $\int_1^2 \frac{16}{(x+1)^2(x-3)} dx$ .