# 1.4) Repeated factors

## Worked example

Express as partial fractions:

$$\frac{11x^2 - 22x + 9}{(x-1)^2(2x-1)}$$

## Your turn

Express as partial fractions:

$$\frac{11x^2 + 14x + 5}{(x+1)^2(2x+1)}$$

$$\frac{4}{x+1} - \frac{2}{(x+1)^2} + \frac{3}{2x+1}$$

## Worked example

Express as partial fractions:

$$\frac{5x^2 + 4x + 1}{x^3 + x^2}$$

## Your turn

Express as partial fractions:

$$\frac{5x^2 - x - 1}{x^3 - x^2}$$

$$\frac{2}{x} + \frac{1}{x^2} + \frac{3}{x - 1}$$

## Worked example

Express as partial fractions:

$$\frac{4x}{(x-4)^2}$$

## Your turn

Express as partial fractions:

$$\frac{3x}{(x+3)^2}$$

$$\frac{3}{x+3} - \frac{9}{(x+3)^2}$$

## Worked example

Express as partial fractions:

$$\frac{4x+1}{x^2-8x+16}$$

## Your turn

Express as partial fractions:

$$\frac{2x+3}{x^2+6x+9}$$

$$\frac{2}{x+3}-\frac{3}{(x+3)^2}$$

## Worked example

Express as partial fractions:

$$\frac{15x^2 - 5x + 2}{9x^3 - 6x^2 + x}$$

## Your turn

Express as partial fractions:

$$\frac{22x^2 + 25x + 1}{4x^3 + 4x^2 + x}$$

$$\frac{6}{x} - \frac{1}{2x+1} + \frac{2}{(2x+1)^2}$$