1 Sunita is x years old.

Beth is one year younger than Sunita.

Joel is double Sunita's age.

The mean of their ages is 5

How old is **Joel**?

[5 marks]

Beth : $x - 1$

Joel : $2x$

Total their ages : $3 \times 5 = 15$ (1)

(1)

$x + x - 1 + 2x = 15$ (1)

$4x = 16$

$x = 4$ (1)

Joel = $2(4) = 8$ (1)

Answer 8

2 $5x^3 + ax^2 + bx + c \equiv kx^3 + (2-k)x^2 + (a^2-1)\,x + \frac{b}{2}$

Work out the values of a, b and c.

[3 marks]

$x^3 : 5 = k$

$x^2 : a = 2 - k$

$a = 2 - 5 = -3$ ✓1

$x : b = a^2 - 1$

$b = (-3)^2 - 1 = 8$ ✓1

$c = \frac{b}{2} = \frac{8}{2} = 4$ ✓1

$a =$ -3 $b =$ 8 $c =$ 4