



Note: A link to the associated YouTube tutorial can be found at [A Level Maths Revision.com/bridging-the-gap/](https://www.youtube.com/watch?v=bridging-the-gap/)

Q1, (Jan 2006, Q2)

(i) Simplify $(3x + 1)^2 - 2(2x - 3)^2$. [3]

(ii) Find the coefficient of x^3 in the expansion of

$$(2x^3 - 3x^2 + 4x - 3)(x^2 - 2x + 1). \quad [2]$$

Q2, (Jun 2006, Q4i)

By expanding the brackets, show that

$$(x - 4)(x - 3)(x + 1) = x^3 - 6x^2 + 5x + 12. \quad [3]$$

Q3, (Jun 2007, Q1)

Simplify $(2x + 5)^2 - (x - 3)^2$, giving your answer in the form $ax^2 + bx + c$. [3]

Q4, (Jun 2007, Q5i)



The diagram shows a rectangular enclosure, with a wall forming one side. A rope, of length 20 metres, is used to form the remaining three sides. The width of the enclosure is x metres.

(i) Show that the enclosed area, A m^2 , is given by

$$A = 20x - 2x^2. \quad [2]$$

Q5, (Jun 2008, Q6i)

Expand and simplify $(x - 5)(x + 2)(x + 5)$. [3]

Q6, (Jan 2012, Q3)

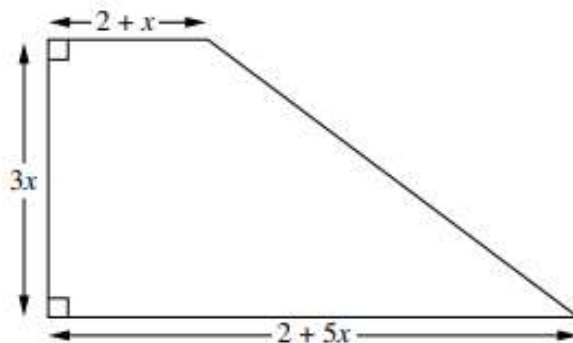
Given that

$$5x^2 + px - 8 = q(x - 1)^2 + r$$

for all values of x , find the values of the constants p , q and r . [4]

Q7, (Jan 2010, Q11i,ii)

A lawn is to be made in the shape shown below. The units are metres.



(i) The perimeter of the lawn is P m. Find P in terms of x . [2]

(ii) Show that the area, A m², of the lawn is given by $A = 9x^2 + 6x$. [2]

Q8, (Jun 2010, Q4i)

Expand $(x - 2)^2(x + 1)$, simplifying your answer. [3]

Q9. (Jan 2011, Q2)

Given that

$$(x - p)(2x^2 + 9x + 10) = (x^2 - 4)(2x + q)$$

for all values of x , find the constants p and q . [3]

Q10, (Jun 2012, Q1)

Simplify $(x - 5)(x^2 + 3) - (x + 4)(x - 1)$. [3]

Q11, (Jan 2013, Q5)

(i) Simplify $(x + 4)(5x - 3) - 3(x - 2)^2$. [3]

(ii) The coefficient of x^2 in the expansion of

$$(x + 3)(x + k)(2x - 5)$$

is -3 . Find the value of the constant k . [3]

Q12, (Jun 2016, Q1)

(i) Simplify $(2x - 3)^2 - 2(3 - x)^2$. [2]

(ii) Find the coefficient of x^3 in the expansion of $(3x^2 - 3x + 4)(5 - 2x - x^3)$. [2]
