1 Expand and then simplify.

(a) $5(2a + 3) + 3(a - 4)$ (1)

(b) $4(3x - 1) + 2(x + 5)$ (1)

(c) $6(m + 2) + 2(3m - 7)$ (1)

(d) $3(2y - 5) + 4(y + 4)$ (1)

(4 marks)

2 A right-angled triangle has an area of $5h + 20$ square units. Its base is $(h + 4)$ units.

(a) Write $5h + 20$ as a number multiplied by a bracket (1)

(b) The area of a triangle is half the base times the height. Write down the height of this triangle (1)

(c) Check your answer by working out the area when $h = 6$, using both $5h + 20$ and your base and height (2)

(4 marks)

3 Write an expression for the area of each composite shape, expanded and simplified.

(a) A rectangle 8 by $(j + 3)$ joined to a rectangle 3 by $(2j - 3)$ (2)

(b) A rectangle 10 by $(h + 2)$ with a square of side 2 removed from it (2)

(6 marks)

4 Expand and simplify each expression.

(a) $2(3x + 4) + 3(2x + 1) + x$ (1)

(b) $4(a + 2b) + 3(2a - b)$ (1)

(c) $5(2m + 3n) + 2(m - 4n)$ (1)

(3 marks)

5 Look at the two expressions $4 + 3(n - 1)$ and $1 + 3n$.

(a) Work out both expressions when $n = 2$ (1)

(b) Work out both expressions when $n = 5$ (1)

(c) Expand the bracket in the first expression and simplify it (2)

(d) Explain why your answer to (c) settles the question in a way that (a) and (b) never could (2)

(6 marks)

6 A rectangle has an area of $6x + 15$ square units and a height that is a whole number.

(a) What is the largest whole number that divides both 6 and 15? (1)

(b) Write down a possible height and width for the rectangle (2)

(c) Check your answer by expanding (2)

(4 marks)

7 **Extension.** Write an expression with a bracket in it that expands to each of the following.

(a) $4x + 8$ (1)

(b) $10y - 15$ (1)

(c) $6a + 9b$ (1)

(d) $12m - 18$ (1)

(4 marks)