Topic Test 1 (20 minutes)

Basic algebra - Higher

1 Circle the expression equivalent to $6n - 3n \times 2n + n$

[1 mark]

$9n^2$ $6n^2 + n$ $7n - 6n^2$ $6n - 9n^2$

2 Expand $a(a - 4)$

Circle your answer.

[1 mark]

$a^2 - 4a$ $a^2 - 4$ $2a - 4$ $-4a^2$

3 Factorise fully $10x^2 - 5xy$

[2 marks]

Answer _____

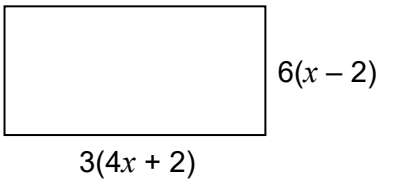
4 $3x(x + 12) \equiv 3x^2 + c^2x$

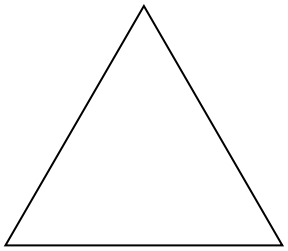
Work out the possible values of c.

[3 marks]

Answer _____

5 The rectangle and the equilateral triangle have equal perimeters.





Not drawn accurately

Work out an expression, in terms of x, for the length of a side of the triangle.
Give your answer in its simplest form.

[4 marks]

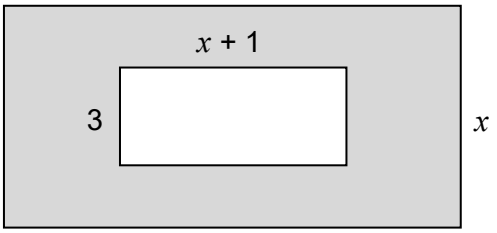
Answer _____

6 $6(x - k) = 5x + 4$ where k is a positive integer.

Show that x must be an even number.

[3 marks]

7 The diagram shows two rectangles.
All dimensions are in cm



Not drawn accurately

Work out an expression, in terms of x, for the shaded area.
Give your answer in its simplest form.

[3 marks]

Answer _____ cm^2

8 Write $3(7x – 1) – 6(x + 4) + 2$ in the form $a(bx + c)$
where a, b and c are integers and $a > 1$

[3 marks]

Answer _____