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 _____

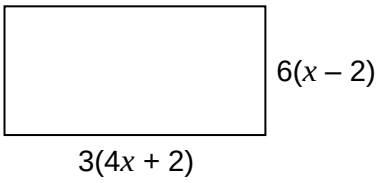
4 $3x(x + 12) \equiv 3x^2 + c^2x$

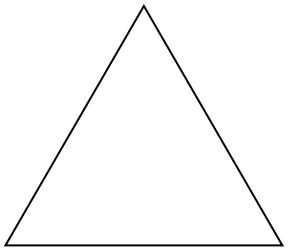
Work out the possible values of c.

[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]

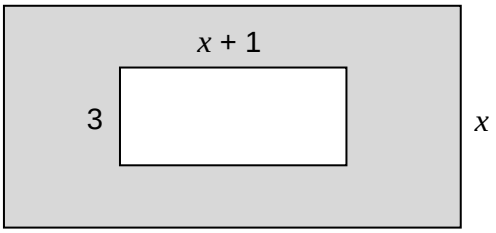
Answer _____

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

5(2x – 1)

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 _____