NAME

Time: 60 minutes

Non-Calculator Questions (40 minutes)
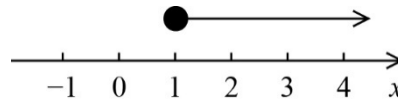
1 x is an integer.

Write down all the values of x that satisfy the inequality $-2 \leqslant x < 2$
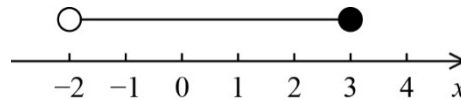
(2 marks)

2   Write as an inequality.

a

(1 mark)

b

(2 marks)

3 $5x + 3 < 19$ where x is an integer.

Find the largest possible value of x.

(3 marks)

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7th **4** Find the integer, x, that satisfies both the inequalities

$2x + 3 > 13$ and $4x - 2 < 26$

(3 marks)

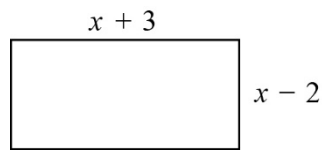**8th** **5** Solve the simultaneous equations

$3x + 2y = -3$

$2x + 6y = 5$

(3 marks)

7th **6** Solve the inequality $5 - 4x < 37$

(2 marks)

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9th

7   The diagram shows a rectangle.

$$x + 3$$

$$x - 2$$

The area of the rectangle is 24 cm²

a Write down and solve an equation to find the value of x.

(4 marks)

b Write down the length and width of the rectangle.

(1 mark)

8th

8   **a** Solve $x^2 + 5x - 24 = 0$

(2 marks)

b Solve $x^2 + 30 = 11x$

(2 marks)

9 $x^2 - 6x + 3$ can be written in the form $(x + p)^2 + q$

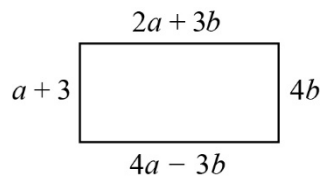**a** Find the values of p and q.

(2 marks)

b Use your answer to part **a** to solve the equation $x^2 - 6x + 3 = 0$

Leave your answer in surd form.

(3 marks)

10 The diagram shows a garden in the shape of a rectangle.

All measurements are in metres.

a Write down a pair of simultaneous equations.

(2 marks)

b Solve the equations to find the values of a and b.

(3 marks)

NAME

🖩 **Calculator Questions (20 minutes)**

8th

11 Solve the inequality $-9 < 4x < 14$

(2 marks)

9th

12 Two cups of coffee and three cups of tea cost £10.10

Three cups of coffee and five cups of tea cost £15.90

Find the cost of a cup of coffee and the cost of a cup of tea.

(4 marks)

10th

13 Solve the equation $7x^2 + 8x - 3 = 0$

Give your solutions correct to 3 significant figures.

You must show all your working.

(3 marks)

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14 **C** is the curve with equation $y = x^2 + 3x + 5$

L is the straight line with equation $y = 5x + 13$

L intersects C at two points, A and B.

Find the midpoint of the line AB.

(6 marks)

Overall mark	/50

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