**Inequalities (H)**

Intervention Booklet

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Useful websites:**

**www.mathswatchvle.com**

*(Video explanations and questions)*

Username: STH…@twgash

Password: stmaths

**www.methodmaths.com**

*(Past papers online that get instantly marked)*

Centre ID: wga

Username: firstname

Password: lastname

**www.hegartymaths.com**

*(Online tutorials and quizzes)*

Login: first name and last name are case sensitive

**www.bbc.co.uk/schools/gcsebitesize/maths**

**Graphical Inequalities**

**Things to remember:**

* Use a table of values if you need to help you draw the linear graphs.
* Use a solid line for ≥ or ≤, and a dotted line for > or <.
* Test a coordinate ((0, 0) is easiest) to work out which side of the line to shade.

**Questions:**

**1.** (a) Solve the inequality 5*e* + 3 > *e* + 12

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**(2)**

(b) On the grid, shade the region defined by the inequality *x* + *y* > 1



**(2)**

 **(Total for Question is 4 marks)**

**2.** The lines *y* = *x* – 2 and *x* + *y* = 10 are drawn on the grid.



On the grid, mark with a cross (**×**) each of the points with integer coordinates that are in the region defined by

*y* > *x* – 2
*x* + *y* < 10
*x* > 3

**(Total for Question is 3 marks)**

**3.** (a)   Given that *x* and *y* are integers such that



find all the possible values of *x*.

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**(2)**

(b)   On the grid below show, by shading, the region defined by the inequalities



Mark this region with the letter R.



**(4)**

 **(Total for question = 6 marks)**

**Solving Quadratic Inequalities**

**Things to remember:**

* Start by solving the quadratic to find the values of x, then sketch the graph to determine the inequality.

**Questions:**
**1.** Solve *x*2 > 3*x* + 4

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**(Total for question = 3 marks)**

**2.** Solve the inequality *x*2 > 3(*x* + 6)

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  **(Total for question = 4 marks)**

**3.** Solve the inequality x² + 5x > 6

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**(Total for question = 3 marks)**

**4.** Solve the inequality x² - 2x + 8 < 0

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**(Total for question = 3 marks)**