# 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.

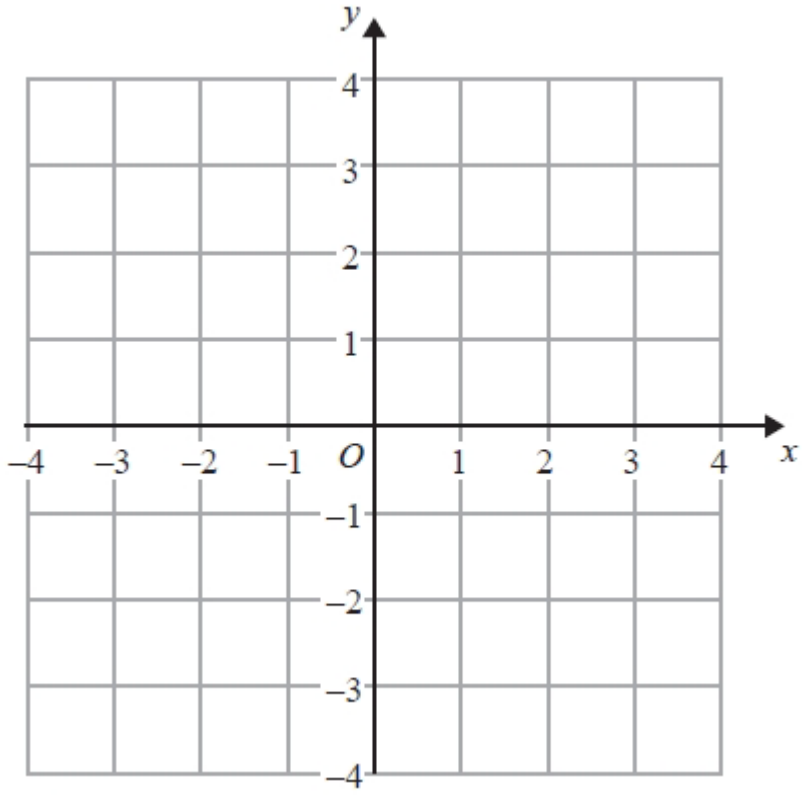
**Questions:**

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

.....

**(2)**

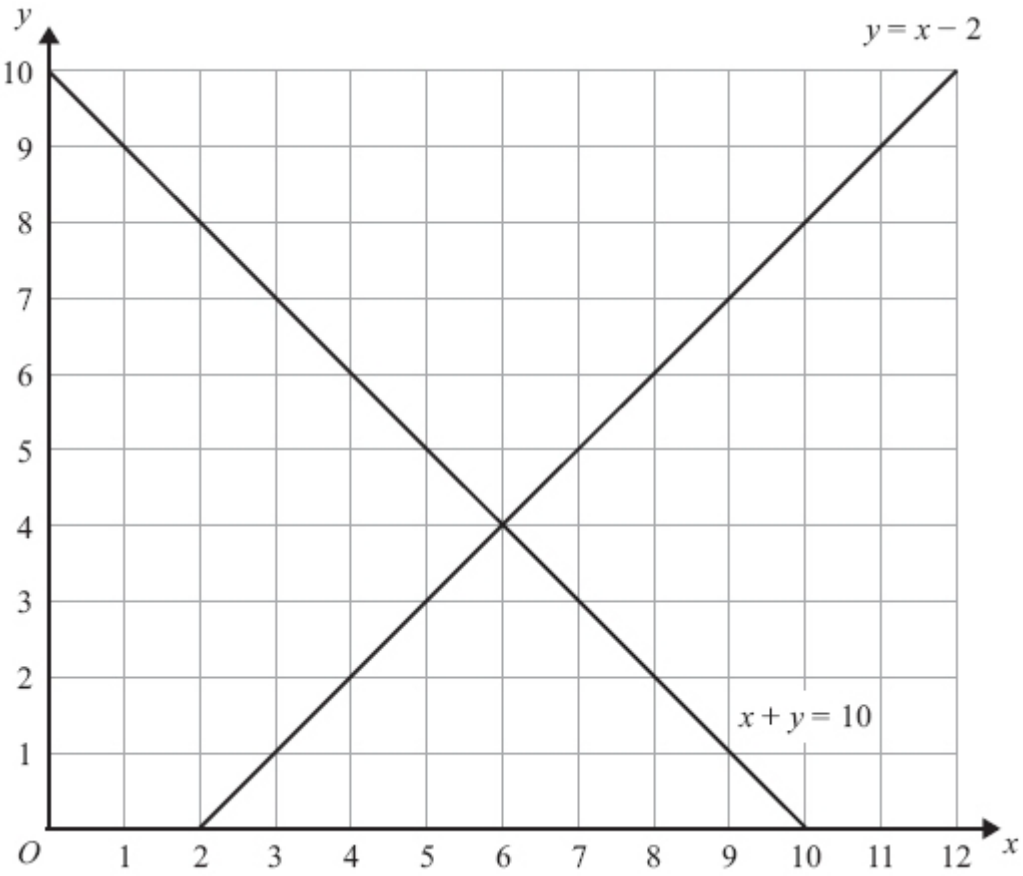
(b) On the grid, shade the region defined by the inequality $x + y > 1$




**(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

$$3 < x < 7$$
$$4 < y < 9$$
and $x + y = 13$

find all the possible values of $x$.

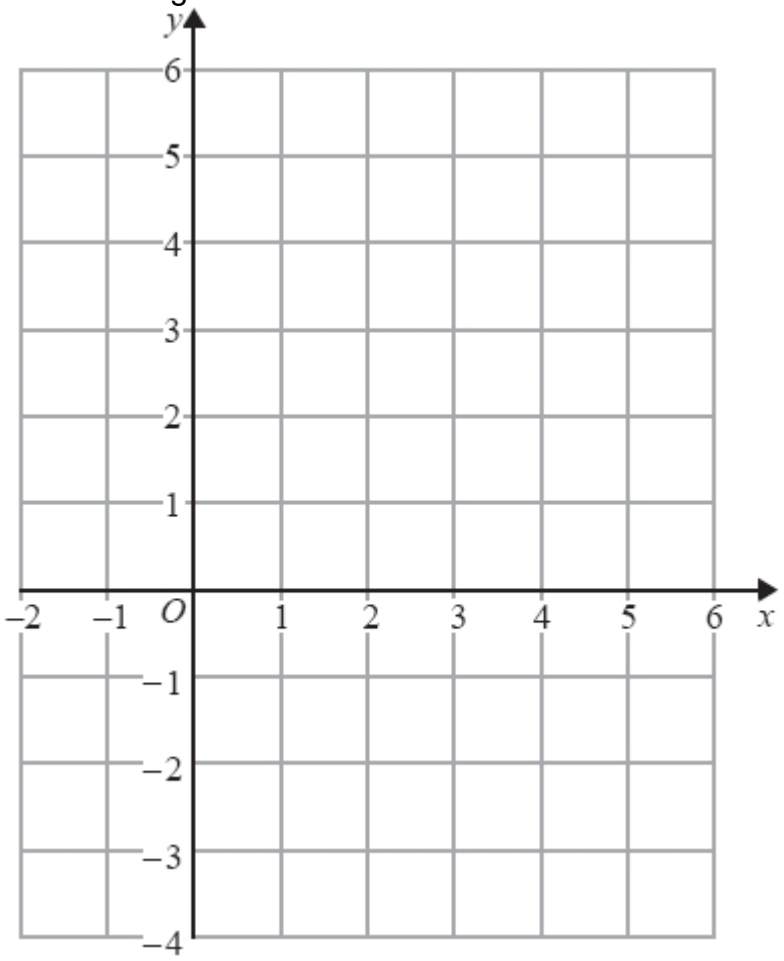
.....

**(2)**

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

$y \geqslant -1$ $y \leqslant 4 - x$ $y \leqslant 3x - 1$

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 $x^2 > 3x + 4$

.....

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

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

.....

**(Total for question = 4 marks)**

**3.** Solve the inequality $x^2 + 5x > 6$

.....

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

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

.....

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