12 (i) Solve the inequality \( 2x + 13 \geq 6 \)

(ii) \( n \) is a negative integer.
Write down all the values of \( n \) which satisfy \( 2n + 13 \geq 6 \)

Jan 2012 4H Paper

10 (i) Solve the inequalities \(-6 < 4x \leq 8\)

(ii) \( n \) is an integer.
Write down all the values of \( n \) which satisfy \(-6 < 4n \leq 8\)

Jan 2012 4H Paper

15 Solve the inequality \( x^2 < 16 \)
6. Show, by shading on the grid, the region defined by all three of the inequalities

\[ x \leq 5 \]
\[ y \geq 3 \]
\[ y \leq x \]

Label your region \( R \).
Write down inequalities to fully define the shaded region.

---

3 The table shows information about the time, in minutes, spent on homework by each of 32 pupils in one night.

<table>
<thead>
<tr>
<th>Time (t minutes)</th>
<th>Number of pupils</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 &lt; t ≤ 20</td>
<td>7</td>
</tr>
<tr>
<td>20 &lt; t ≤ 40</td>
<td>16</td>
</tr>
<tr>
<td>40 &lt; t ≤ 60</td>
<td>3</td>
</tr>
<tr>
<td>60 &lt; t ≤ 80</td>
<td>6</td>
</tr>
</tbody>
</table>

(a) Calculate the percentage of the 32 pupils who spent more than 60 minutes on their homework.

(b) Calculate an estimate for the total time spent on homework by the 32 pupils.
Inequalities IGCSE Higher Tier Past Exam Questions

Jan 2013 4HR Paper

7 (i) Solve the inequalities \( 3 \leq x + 4 < 7 \)

(ii) \( n \) is an integer.

Write down all the values of \( n \) which satisfy \( 3 \leq n + 4 < 7 \)

Jan 2014 3H

7 (a)

An inequality is shown on the number line.

Write down this inequality.

(b) (i) Solve the inequality \( 2(y - 3) \geq 1 \)

(ii) Write down the lowest \textbf{integer} which satisfies this inequality.
19 Solve the inequality $3x^2 + 5 < 53$

Jan 2015 4H Paper

10 (a) Solve the inequality $3x + 8 < 35$

(b) Write down the inequality shown on the number line.

June 2015 4H Paper

9 (a) Solve the inequalities $-5 < x + 4 \leq 3$

(b) $n$ is an integer.
Write down all the values of $n$ that satisfy $-3 \leq n < 2$
16 Solve the inequality \(5x^2 - 13 < 32\)
Show clear algebraic working.

7 (a) Solve the inequality \(e - 2 < 0\)

(b) Solve the inequality \(5 - 3e < 4\)

(c) Write down the integer value of \(e\) that satisfies both of the inequalities
\[e - 2 < 0 \quad \text{and} \quad 5 - 3e < 4\]
6. (a) Solve the inequalities \(-4 < 3x + 5 \leq 11\)

(b) Write down the integer values of \(x\) which satisfy \(-4 < 3x + 5 \leq 11\)

9. Write down the 3 inequalities that define the shaded region.
10. (a) An inequality is shown on the number line. Write down this inequality.

\[ \ldots \ldots \ldots \]

(b) (i) Solve the inequality \( 2x + 9 > 1 \)

(ii) \( n \) is a negative integer. Write down all the values of \( n \) which satisfy \( 2n + 9 > 1 \)
9. (a) On the grid, draw the graph of \(2x - 3y = 6\) from \(x = 0\) to \(x = 9\).

(b) On the grid, show by shading the region which satisfies the inequalities

\[
\begin{align*}
3 \leq x & \leq 6 \\
\text{and} \\
2 \leq y & \leq 4
\end{align*}
\]

Label your region \(R\).
19. The histogram shows information about the widths, $w$ centimetres, of some leaves.

The number of leaves with widths in the class $3 < w \leq 4$ is 15

(a) Find the number of leaves with widths in the class $0 < w \leq 2$

(b) Find an estimate of the number of leaves with widths in the range $4.5 < w \leq 5.5$
9. (a) Solve $7(x - 1) = 5 - 2x$
   You must show sufficient working.

(b) (i) Solve the inequality $4x + 5 \leq 21$

(ii) $n$ is a positive integer.

Write down all the values of $n$ which satisfy $4n + 5 \leq 21$

8. (a) On the number line, show the inequality $-2 < x \leq 3$

(b) $n$ is an integer.

Write down all the possible values of $n$ which satisfy the inequality

$-1 \leq n < 4$
13. Show, by shading on the grid, the region which satisfies all three of these inequalities.

\[ y \leq 5 \quad y \leq 2x \quad y \geq x + 1 \]

Label your region \( R \).

Nov 2006 3H Paper

7. Solve the inequality \( 9x - 2 < 5x + 4 \)
9. Show, by shading on the grid, the region which satisfies these inequalities
\[ 1 \leq x \leq 3 \quad \text{and} \quad -4 \leq y \leq -2 \]

Label your region \( R \).
13. Show, by shading on the grid, the region which satisfies all three of these inequalities.

\[ x \geq 1 \quad y \geq x \quad x + 2y \leq 6 \]

Label your region \( R \).
15. (a) Solve the inequality $x^2 \leq 4$

(b) On the number line, represent the solution set of $x^2 \leq 4$

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9. (a) Solve the inequality $2x - 3 < 5$

(b) $n$ is a positive integer.

Write down all the values of $n$ which satisfy the inequality $2n - 3 < 5$

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8. (i) Solve the inequality $3x + 7 > 1$

(ii) On the number line, represent the solution to part (i).