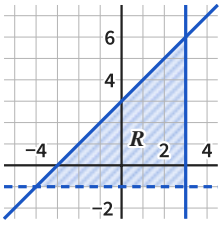
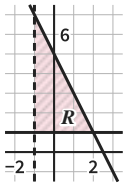
Inequalities and regions

Exit ticket ANSWERS Name _____

1 Shade the region R where $y > -1$, $x \leq 3$ and $y \leq x + 3$.



2 Write down the three inequalities that describe R.



$y \geq 1, x > -1, 2x + y \leq 5$

3 List the points with integer coordinates in the region where $y > 0$, $x \geq -1$ and $x + y \leq 2$.

(−1, 1), (−1, 2), (−1, 3), (0, 1), (0, 2), (1, 1)

Inequalities and regions

Exit ticket ANSWERS Name _____

1 Shade the region R where $y > -1$, $x \leq 3$ and $y \leq x + 3$.

2 Write down the three inequalities that describe R.

$y \geq 1, x > -1, 2x + y \leq 5$

3 List the points with integer coordinates in the region where $y > 0$, $x \geq -1$ and $x + y \leq 2$.

(−1, 1), (−1, 2), (−1, 3), (0, 1), (0, 2), (1, 1)

The Maths Habit

Inequalities and regions

Exit ticket ANSWERS Name _____

1 Shade the region R where $y > -1$, $x \leq 3$ and $y \leq x + 3$.

2 Write down the three inequalities that describe R.

$y \geq 1, x > -1, 2x + y \leq 5$

3 List the points with integer coordinates in the region where $y > 0$, $x \geq -1$ and $x + y \leq 2$.

(−1, 1), (−1, 2), (−1, 3), (0, 1), (0, 2), (1, 1)

The Maths Habit

Inequalities and regions

Exit ticket ANSWERS Name _____

1 Shade the region R where $y > -1$, $x \leq 3$ and $y \leq x + 3$.

2 Write down the three inequalities that describe R.

$y \geq 1, x > -1, 2x + y \leq 5$

3 List the points with integer coordinates in the region where $y > 0$, $x \geq -1$ and $x + y \leq 2$.

(−1, 1), (−1, 2), (−1, 3), (0, 1), (0, 2), (1, 1)

The Maths Habit

Inequalities and regions

Exit ticket ANSWERS Name _____

1 Shade the region R where $y > -1$, $x \leq 3$ and $y \leq x + 3$.

2 Write down the three inequalities that describe R.

$y \geq 1, x > -1, 2x + y \leq 5$

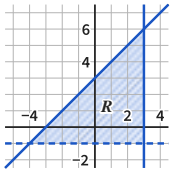
3 List the points with integer coordinates in the region where $y > 0$, $x \geq -1$ and $x + y \leq 2$.

(−1, 1), (−1, 2), (−1, 3), (0, 1), (0, 2), (1, 1)

The Maths Habit

Exit ticket Inequalities and regions

1 **Shade the region R where $y > -1$, $x \leq 3$ and $y \leq x + 3$.**



corners (−4, −1), (3, −1), (3, 6)

TESTS Solid or dashed, then the side by a test point

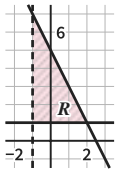
LOOK FOR *$y = -1$ solid or $x = 3$ dashed* solid and dashed swapped

shaded above $y = x + 3$ the wrong side: (0, 0) gives $0 \leq 3$, true, so R is below

FIX IT

Is the line for $y \geq 3 - 2x$ solid or dashed? Is (0, 0) in the region? *Solid; no: $0 \geq 3$ is false*

2 **Write down the three inequalities that describe R.**



$y \geq 1, x > -1, 2x + y \leq 5$

TESTS Writing the inequalities for a region

LOOK FOR *$y > 1, x > -1, 2x + y > 5$* the same sign on every line

$x \geq -1$ a dashed line read as included

FIX IT

R is above the dashed line $y = 2$ and to the left of the solid line $x = -1$.
Write the two inequalities. *$y > 2, x \leq -1$*

3 **List the points with integer coordinates in the region where $y > 0$, $x \geq -1$ and $x + y \leq 2$.**

(−1, 1), (−1, 2), (−1, 3), (0, 1), (0, 2), (1, 1)

TESTS Integer points: solid lines in, dashed lines out

LOOK FOR *(0, 0), (1, 0) or (2, 0) included* points on the dashed line $y = 0$ are not in R

(−1, 1), (−1, 2), (−1, 3) left out points on the solid line $x = -1$ are in R

FIX IT

List the points with integer coordinates where $x > 0$, $y \geq 0$ and $x + 2y \leq 4$. *(1, 0), (1, 1), (2, 0), (2, 1), (3, 0), (4, 0)*