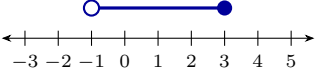
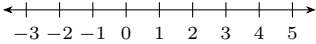
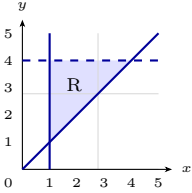
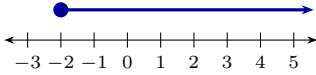
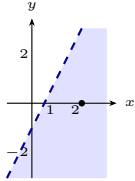


Reading inequalities on number lines Ineq 1 Write down the inequality shown on the number line. 	Drawing inequalities on number lines Ineq 2 Show $x \geq -2$ on a number line. 	Solving inequalities Ineq 3 Solve $3x - 5 < 13$	Solving inequalities with the unknown on both sides Ineq 4 Solve $7x + 4 \geq 3x + 24$
Solving double inequalities Ineq 5 Solve $-3 < 2x + 1 \leq 9$ List the integer values of x that satisfy the inequality.	Constructing inequalities Ineq 6 Cinema tickets cost £8 each, and there is a £5 booking fee for each order. Mia has £50. Write an inequality for the number of tickets, t, that Mia can buy, and solve it.	Showing inequalities on a graph Ineq 7 Show the region $y < 2x - 1$ on a set of axes. State whether the line is solid or dashed.	Reading regions on a graph Ineq 8 Write down the three inequalities that describe the shaded region R. 
Dividing by a negative number Ineq 9 Solve $5 - 3x > 17$			

AnswerIneq 4 $\begin{array}{r} 7x + 4 \geq 3x + 24 \\ -3x \quad -3x \\ \hline 4x + 4 \geq 24 \\ -4 \quad -4 \\ \hline 4x \geq 20 \\ \div 4 \quad \div 4 \\ \hline x \geq 5 \end{array}$ Remember: Take away the smaller x-term from both sides first.	AnswerIneq 3 $\begin{array}{r} 3x - 5 < 13 \\ +5 \quad +5 \\ \hline 3x < 18 \\ \div 3 \quad \div 3 \\ \hline x < 6 \end{array}$ (x can be any number less than 6) Remember: Solve it like an equation, but keep the sign.	AnswerIneq 2 Filled circle at -2, because $\geq$ includes -2:  The arrow points right: x can be -2 or any number bigger than -2. Remember: Open circle: not included. Filled circle: included.	AnswerIneq 1 Number lines: open circle for $<$ or $>$ (not included), filled circle for $\leq$ or $\geq$ (included) Open circle at -1: $x > -1$ Filled circle at 3: $x \leq 3$ $-1 < x \leq 3$ Remember: Open circle: not included. Filled circle: included.
AnswerIneq 8 Graphs: dashed line for $<$ or $>$, solid line for $\leq$ or $\geq$ $x \geq 1$: right of the solid line $x = 1$ $y < 4$: below the dashed line $y = 4$ $y \geq x$: above the solid line $y = x$ Test a point in R, $(2, 3)$: $2 \geq 1 \checkmark \quad 3 < 4 \checkmark \quad 3 \geq 2 \checkmark$ Remember: Dashed: not on it. Solid: on it. Test a point.	AnswerIneq 7 Graphs: dashed line for $<$ or $>$, solid line for $\leq$ or $\geq$ Draw $y = 2x - 1$ dashed. Test $(2, 0)$: $0 < 2 \times 2 - 1$, so $0 < 3 \checkmark$ Shade the side containing $(2, 0)$.  Remember: Dashed: not on it. Solid: on it. Test a point.	AnswerIneq 6 Total cost = $8t + 5$. Mia can spend at most £50, so $\leq$: $\begin{array}{r} 8t + 5 \leq 50 \\ -5 \quad -5 \\ \hline 8t \leq 45 \\ \div 8 \quad \div 8 \\ \hline t \leq 5.625 \end{array}$ t is a whole number, so at most 5 tickets. Remember: At most $\leq$, at least $\geq$, more than $>$, less than $<$.	AnswerIneq 5 $\begin{array}{r} -3 < 2x + 1 \leq 9 \\ -1 \quad -1 \quad -1 \\ \hline -4 < 2x \leq 8 \\ \div 2 \quad \div 2 \quad \div 2 \\ \hline -2 < x \leq 4 \end{array}$ Integers: $-1, 0, 1, 2, 3, 4$ (-2 is not included, as the sign is $<$; 4 is included, as the sign is $\leq$) Remember: Whatever you do to one part, do to all three parts.
			AnswerIneq 9 Multiplying or dividing both sides by a negative number flips the inequality sign $\begin{array}{r} 5 - 3x > 17 \\ -5 \quad -5 \\ \hline -3x > 12 \\ \div (-3) \quad \div (-3) \quad \text{sign flipped} \\ \hline x < -4 \end{array}$ Check $x = -5$: $5 - 3 \times (-5) = 20 > 17 \checkmark$ Remember: Times or divide by a negative? Flip the sign!