

Inequalities

Revision questions: answers

Reading and drawing inequalities on number lines

- 1 (a) $x > 1$ (b) $x \leq -2$ (c) $-3 \leq x < 2$
- 2 (a) Filled circle at 4, arrow to the right
(b) Open circle at -1 , filled circle at 5, line between them
- 3 (a) 0, 1, 2, 3, 4, 5 (b) $-4, -3, -2$
- 4 $1 \leq t < 5$: filled circle at 1, open circle at 5, line between them

Solving inequalities

- 5 (a) $x > 5$ (b) $x \leq 7$ (c) $x < 7$ (d) $x \geq 10$
- 6 $x > 6$: open circle at 6, arrow to the right

Solving inequalities with the unknown on both sides

- 7 (a) $x > 4$ (b) $x \leq 4$ (c) $x < 5$

Solving double inequalities

- 8 (a) $2 < x \leq 6$: 3, 4, 5, 6
(b) $-2 \leq x < 3$: $-2, -1, 0, 1, 2$
(c) $3 < x < 7$: 4, 5, 6

- 9 Smallest -1 , largest 3

Constructing inequalities

- 10 $3n - 4 > 20$, so $n > 8$
- 11 $3 + 2m \leq 19$, so $m \leq 8$: 8 miles
- 12 $4x + 12 \geq 40$, so $x \geq 7$: the smallest value is 7

Inequalities on graphs

- 13 (a) $x \leq 3$ (b) $y > -1$ (c) $y \geq x + 1$
- 14 $y \geq 1, x < 4, y \leq x$
- 15 10 points

Dividing by a negative number

- 16 (a) $x < -4$ (b) $x \geq 3$ (c) $x > 2$
- 17 $10 - 2 \times 4 = 2$, which is not more than 4.
Jo divided by -2 without flipping the sign:
the answer is $x < 3$.

Problem solving

- 18 3, 4, 5, 6
- 19 For example $-3 < x < 2$, or $-2 \leq x \leq 1$
- 20 More than 200 minutes