

Inequalities

GCSE Maths · Practice Questions

20 questions · 62 marks total

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Section A · Foundation

Questions 1–3 are the most straightforward; they get harder as you go on. Question 10 is the most challenging.

1 [1 mark]

List all the integers n that satisfy $-2 < n \leq 2$

.....

2 [2 marks]

Solve $x + 5 > 9$

.....

3 [2 marks]

Solve $3x \leq 21$

.....

4 [2 marks]

Solve $2x - 1 < 11$

.....

5 [3 marks]

(a) Solve $5x + 3 \geq 23$

(b) Write down the smallest integer that satisfies the inequality.

.....

6 [3 marks]

Solve $4(x - 2) \leq 12$

.....

7

[3 marks]

Solve $-3 < 2x + 1 \leq 9$

.....

8

[3 marks]

Solve $7 - x > 2$

.....

9

[4 marks]

List all the integer values of n that satisfy $3 \leq 2n + 1 < 13$

.....

10

[4 marks]

A rectangle has width x cm and length $(x + 4)$ cm.

The perimeter is less than 40 cm, and x is a whole number greater than 3.

Find all the possible values of x .

.....

Section B · Higher

Higher-tier style. Again, questions 1–3 are the gentlest and question 10 is the hardest.

1

[2 marks]

Solve $5 - 2x \geq 1$

.....

2

[2 marks]

Solve $3(x + 2) < 5x - 4$

.....

3

[3 marks]

Solve $x^2 < 36$

.....

4

[3 marks]

Solve $x^2 \geq 49$

.....

5

[4 marks]

Solve $x^2 - 2x - 15 < 0$

.....

6

[4 marks]

Solve $x^2 + 4x - 12 \geq 0$

.....

7

[4 marks]

Solve $2x^2 - 5x - 3 \leq 0$

.....

8

[4 marks]

The region R is defined by the three inequalities

$$y \geq 1$$

$$y \leq x + 2$$

$$x + y \leq 6$$

Find the coordinates of the three corners of R.

.....

9

[4 marks]

Kim has £50. She buys a bag costing £14 and wants to spend the rest on books costing £6.50 each. Form an inequality and use it to find the greatest number of books she can buy.

10

[5 marks]

Find all the integer values of x that satisfy **both** of these inequalities.

$$x^2 - 16 < 0$$

$$2x + 5 \geq 1$$
