JRA Tutors
Private tuition and small online Study Pods

Quadratic Inequalities

Grade 8/9 topic · Higher tier · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Questions 1–15 (64 marks) build up to the harder Grade 8–9 style questions at the end; aim to complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 94 marks.

Warm-up

1 Solve $x^2 - 10x + 24 < 0$. **[4 marks]**

Answer _____

2 Solve $x^2 - 10x + 24 \leq 0$. **[4 marks]**

Answer _____

3 Solve $x^2 - 6x + 8 < 0$. **[4 marks]**

Answer _____

4 Solve $x^2 + 8x + 15 \leq 0$. **[4 marks]**

Answer _____

5 Solve $x^2 - 4x - 5 \geq 0$. **[4 marks]**

Answer _____

Core

6 Solve $x^2 - 4x - 12 \leq 0$. **[4 marks]**

Answer _____

7 Solve $x^2 - 25 > 0$. **[4 marks]**

Answer _____

8 Solve $x^2 - 25 < 0$ and list the integer solutions. **[5 marks]**

Answer _____

9 Solve $x^2 - 7x + 10 \geq 0$. **[4 marks]**

Answer _____

10 Solve $x^2 > 4$. **[3 marks]**

Answer _____

Stretch

11 Solve $-x^2 + 9x - 20 < 0$. **[5 marks]**

Answer _____

12 Solve $x^2 + 3x \geq 0$. **[4 marks]**

Answer _____

13 Solve $2x^2 - 5x - 3 < 0$. **[5 marks]**

Answer _____

14 Solve $12 - 7x + x^2 \leq 0$ and give the integers. **[5 marks]**

Answer _____

15 Find the values of x for which $x^2 - x < 12$. **[5 marks]**

Answer _____

Challenge

16 Solve $x^2 - 4x - 1 > 0$. Give the critical values to 2 d.p. **[6 marks]**

Answer _____

17 Solve $2x^2 + 3x - 5 \geq 0$. **[6 marks]**

Answer _____

18 For what values of k does $x^2 + kx + 4 = 0$ have no real roots? **[6 marks]**

Answer _____

19 Find the range of values of k for which $x^2 - 6x + k = 0$ has two distinct real roots. **[6 marks]**

Answer _____

20 Solve $x^2 + x - 12 > 0$ and $3x - 1 < 8$ together. Give the set of x-values that satisfy both. **[6 marks]**

Answer _____