2.4 Quadratic Inequalities: 10-minute Pack

AQA 8365 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 Which of the following is the correct solution to the inequality $x^2 - 25 \leq 0$?

- ☐ A) $x \leq -5$
- ☐ B) $x \geq 5$
- ☐ C) $-5 \leq x \leq 5$
- ☐ D) $x \leq -5$ or $x \geq 5$

(Total for Question 1 is 1 mark)

---

2 Solve the inequality $x^2 - 9 > 0$.

(Total for Question 2 is 2 marks)

---

3 n is an integer. Write down all the values of n for which $n^2 - 2n - 8 < 0$.

(Total for Question 3 is 3 marks)

---

4 Find the range of values of k for which $x^2 + kx + 1 = 0$ has no real roots.

(Total for Question 4 is 3 marks)

© Revision Library | revisionlibrary.co.uk

Mark scheme · 2.4 Quadratic Inequalities: 10-minute Pack

Question 1

correct option identified (C)	**B1**

Answer: C) $-5 \leq x \leq 5$

Question 2

factorise to (x-3)(x+3) and identify critical values x = -3 and x = 3	**M1**
correct inequality x < -3 or x > 3 (oe)	**A1**

Answer: x < -3 or x > 3

Question 3

finds the critical values	**M1**
-2 < n < 4 seen	**A1**
integers -1, 0, 1, 2, 3 listed cao	**A1**

Answer: -1, 0, 1, 2, 3

Question 4

$k^2 - 4(1)(1) < 0$	**M1**
critical values $k = \pm 2$	**M1**
-2 < k < 2 cao	**A1**

Answer: -2 < k < 2

© Revision Library | revisionlibrary.co.uk