GCSE MATHS · QUADRATIC EQUATIONS

Blurt it

Step 1

Name _____ **Date** _____

1. Cover your notes and put your phone face down.
2. Set a timer for 5 minutes.
3. Write down everything you remember about quadratic equations: methods, key words, examples, and mistakes to avoid. Diagrams count too.

Stuck? Start with one of these: factorise · root · zero product rule

When the timer ends, turn over and check what you remembered.

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Check it, fix it, space it

Steps 2, 3 and 4

Check it

Tick each idea you wrote down, even in your own words.

- [ ] A quadratic has an x^2 term as its highest power
- [ ] Factorise $x^2 + bx + c$ by finding two numbers that multiply to c and add to b
- [ ] Check your factorising by expanding the brackets back out
- [ ] Avoid sign slips when the constant term is negative: one number is positive, one negative
- [ ] Zero product rule: if two things multiply to make 0, at least one of them must be 0
- [ ] Once factorised, set each bracket equal to 0 to find the two solutions
- [ ] The solutions of a quadratic equation are called its roots
- [ ] Solve x^2 = a number by square rooting both sides
- [ ] Square rooting gives a positive and a negative answer: do not forget the negative root
- [ ] Choose a method: x^2 = a number, square root it; otherwise try factorising

Higher only

- [ ] Factorise quadratics where the number in front of x^2 is not 1
- [ ] Complete the square, then use it to find the turning point or to solve the equation
- [ ] Watch the signs when completing the square
- [ ] Use the quadratic formula when a quadratic will not factorise into whole numbers
- [ ] Substitute a, b and c with their signs, especially when a term is negative or missing
- [ ] Give formula answers rounded as asked, or exactly in surd form
- [ ] Rearrange into $ax^2 + bx + c = 0$ before you solve
- [ ] Form and solve quadratics from worded problems
- [ ] Solve a linear and a quadratic equation simultaneously

Key words to use: quadratic · coefficient · root · factorise · expand · zero product rule · turning point completing the square · quadratic formula · discriminant

I remembered _____ out of 10. **Higher only: _____ out of 9.**

Fix it

Pick 3 ideas you missed. Look them up, then write each one correctly.

1	2	3

Space it

Blurt again on a fresh sheet. Gaps help you remember for longer.

Tomorrow	In 3 days	In a week
Date _____	Date _____	Date _____
Score _____ / 10	Score _____ / 10	Score _____ / 10
Higher only _____ / 9	Higher only _____ / 9	Higher only _____ / 9

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