

Writing and solving quadratic equations

Solve the following problems by writing and solving quadratic equations. Show full working.

1. Herbert thought of a number, squared it, then added the number he started with. Then he subtracted 6. This gave him 0. What are the two numbers he could have started with?
2. Claudia thought of a number, squared it, then subtracted the number she started with. This gave her 6. What are the two numbers she could have started with?
3. Willy thought of a number, squared it, then added 3 times the number he started with. This gave him 18. What are the two numbers he could have started with?
4. Flusey is 2 years older than Bipps. If you multiply their ages together, you get 15. How old is Bipps?
5. Katie thought of a number, then added 5, then multiplied the result by the number she started with, then added 15. This gave her 9. What are the two numbers she could have started with?
6. The product of two consecutive numbers is 42. What are the two possibilities for the lowest number?
7. A rectangular pool is 4 m longer than it is wide. Find its width if its area is 45 m^2 .
8. The height, h , of a cannon ball at time t is given by $h = 10t - t^2$. Find the two times when its height is 24 m.
9. The product of two consecutive even numbers is 24. What are the two possibilities for the lowest number?
10. A rectangle is $2x - 2$ long and $\frac{1}{2}x + 4$ wide. Its area is 36 m^2 . Find x .
11. Jasbonne thought of a number, squared it, and added 132. This gave her 23 times the number she started with. What are the two numbers she could have started with?
12. Slobodan thought of a number, squared it, and added 6. This gave him -5 times the number he started with. What are the two numbers he could have started with?

Answers

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| 1. 2, -3 | 2. 3, -2 | 3. 3, -6 | 4. 3 | 5. -2, -3 | 6. 6, -7 |
| 7. 5 m | 8. 4, 6 | 9. 4, -6 | 10. 4 m | 11. 11, 12 | 12. -2, -3 |