

---

## Number of Real Solutions for Degree 2

**X60334\_en**

Write a function @numsols2deg(a, b, c)@ that receives as argument the three coefficients of the 2nd degree equation  $ax^2 + bx + c = 0$  and returns how many real solutions it has: 0, 1, or 2.

The solutions of that equation are given by the expression  $x = (-b \pm \sqrt{b^2 - 4ac})/2a$  (best seen in the pdf version of the statement).

The expression  $b^2 - 4ac$  is called its discriminant: if it is negative, then the square root cannot provide real values, and there are no real solutions; if the discriminant is 0, then the square root is also 0 and the two options  $-b \pm 0$  coincide, so that there is a single real solution; if the discriminant is positive, then we obtain two real solutions.

### Sample session

```
>>> numsols2deg(3, 5, 2)
2
>>> numsols2deg(1, 2, 1)
1
>>> numsols2deg(1, 1, 1)
0
>>> numsols2deg(-2, 2, 2)
2
```

### Problem information

Author: ProAl

Generation: 2026-01-25T17:14:16.522Z

© Jutge.org, 2006–2026.  
<https://jutge.org>