
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

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