


```

1  import math
2  a = 1
3  b = -3
4  c = 2
5  print(f"Quadratic equation: {a}x2 + {b}x + {c} = 0")
6  print()
7  discriminant = b ** 2 - 4 * a * c
8  print(f"Discriminant = b2 - 4ac = {b}2 - 4({a})({c}) = {discriminant}")
9  if discriminant > 0:
10     # Two real solutions
11     x1 = (-b + math.sqrt(discriminant)) / (2 * a)
12     x2 = (-b - math.sqrt(discriminant)) / (2 * a)
13     print("Two real solutions:")
14     print(f"x1 = {x1}")
15     print(f"x2 = {x2}")
16 elif discriminant == 0:
17     # One real solution
18     x = -b / (2 * a)
19     print("One real solution:")
20     print(f"x = {x}")
21 else:
22     real_part = -b / (2 * a)
23     imaginary_part = math.sqrt(-discriminant) / (2 * a)
24     print("Two complex solutions:")
25     print(f"x1 = {real_part} + {imaginary_part}i")
26     print(f"x2 = {real_part} - {imaginary_part}i")
27     
28 print(f"4ac = 4 × {a} × {c} = {4 * a * c}")
29 print(f"b2 = {b}2 = {b ** 2}")

```

Quadratic equation: $1x^2 + -3x + 2 = 0$

Discriminant = $b^2 - 4ac = -3^2 - 4(1)(2) = 1$

Two real solutions:

$x_1 = 2.0$

$x_2 = 1.0$

$4ac = 4 \times 1 \times 2 = 8$

$b^2 = -3^2 = 9$

Process finished with exit code 0