```
import numpy as np

# Define the coefficients of the equation
a = 3
b = 9

# Define the array representing the equation
A = np.array([[a]])

# Define the array representing the right-hand side of the equation
B = np.array([b])

# Solve the equation using the numpy.linalg.solve() function
x = np.linalg.solve(A, B)

# Print the solution
print("The solution is x =", x[0])
```

```
The solution is x = 3.0
```

```
import numpy as np

# Define the coefficients matrix A and the constants vector b
A = np.array([[2, 1, -1], [1, 1, 1], [1, -1, 1]])
b = np.array([8, 6, 2])

# Solve for the variables x, y, and z using the dot product of the inverse of A and b
x, y, z = np.linalg.inv(A).dot(b)

# Print the solution for x, y, and z
print(f"The solution for x is: {x}")
print(f"The solution for y is: {y}")
print(f"The solution for z is: {z}")
```

```
The solution for x is: 3.3333333333333335
The solution for y is: 2.0
The solution for z is: 0.6666666666666667
```

```
import numpy as np

# Prompt the user to enter the dimensions of the coefficients matrix
num_rows = int(input("Enter the number of rows for the coefficients matrix: "))
num_cols = int(input("Enter the number of columns for the coefficients matrix: "))

# Prompt the user to enter the coefficients matrix
print("Enter the coefficients matrix row by row:")
A = np.array([list(map(float, input().split())) for _ in range(num_rows)])

# Prompt the user to enter the constants vector
print("Enter the constants vector:")
b = np.array(list(map(float, input().split())))

# Solve for the variables using the dot product of the inverse of A and b
variables = np.linalg.inv(A).dot(b)

# Print the solution for the variables
for i, variable in enumerate(variables):
    print(f"The solution for variable {i+1} is: {variable}")
```

```
Enter the number of rows for the coefficients matrix: 3
Enter the number of columns for the coefficients matrix: 3
Enter the coefficients matrix row by row:
2  1 -1
1    1    1
1 -1 1
Enter the constants vector:
8 6 2
The solution for variable 1 is: 3.3333333333333335
The solution for variable 2 is: 2.0
The solution for variable 3 is: 0.6666666666666667
```

```
import cmath

# Define the coefficients of the quadratic equation
a = 2
b = 3
c = 4
```

```
c = 4

# Compute the discriminant
discriminant = cmath.sqrt(b**2 - 4*a*c)

# Compute the solutions for x using the quadratic formula
x1 = (-b + discriminant) / (2*a)
x2 = (-b - discriminant) / (2*a)

# Print the solutions for x
print(f"The solutions for x are: {x1} and {x2}")
```

```
The solutions for x are: (-0.75+1.1989578808281798j) and (-0.75-1.1989578808281798j)
```

```
import cmath

# Ask the user for the coefficients of the quadratic equation
a = float(input("Enter the coefficient of x^2: "))
b = float(input("Enter the coefficient of x: "))
c = float(input("Enter the constant: "))

# Calculate the discriminant
discriminant = cmath.sqrt(b**2 - 4*a*c)

# Calculate the solutions using the quadratic formula
x1 = (-b + discriminant) / (2*a)
x2 = (-b - discriminant) / (2*a)

# Print the solutions
print(f"The solutions are: {x1} and {x2}")
```

```
Enter the coefficient of x^2: 1
Enter the coefficient of x: 2
Enter the constant: 1
The solutions are: (-1+0j) and (-1+0j)
```