```
A = [1 0; 0 1; 1 2];

b = [1 1 1]';

[Q, R] = mgs(A);

RHS = Q.' * b;
x = backward_substitution(R, RHS);

x
```

```
Q =

    0.7071   -0.5774
         0    0.5774
    0.7071    0.5774


R =

    1.4142    1.4142
         0    1.7321


x =

    0.6667    0.3333
```