

NonlinearSolveAnswers

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0.1 Nonlinear Solve Answers

0.1.1 Solution to Problem 1

```
In [3]: using Roots
        f(x) = 10 - x + exp(1)*sin(x)
        fzero(f, BigFloat(2.0))
```

```
Out [3]: 9.579933542259600850706664022606528199400333915466167486112544651727603280614496
```

0.1.2 Solution to Problem 2

```
In [5]: f! = function (dx,x)
        dx[1] = x[1] + x[2] + x[3]^2 - 12
        dx[2] = x[1]^2 - x[2] + x[3] - 2
        dx[3] = 2x[1] - x[2]^2 + x[3] - 1
    end
    using NLSolve
    res = nlsolve(f!, [1.0; 1.0; 1.0])
    res.zero
    res = nlsolve(f!, [1.0; 1.0; 1.0], autodiff=true)
    res.zero
```

```
Out [5]: 3-element Array{Float64,1}:
 1.0000000021270776
 2.000000001120045
 2.9999999994843582
```