PackageProblemAnswers

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0.1 LightGraphs Problem

```
In [ ]: using LightGraphs, Distributions
        function mkTree(maxdepth::Int = 10, p::Float64 = 0.8, g::SimpleGraph = Grap
            if (maxdepth <= 1) g
            else
               b = Binomial(2, p)
               nEdges = max(1, rand(b))
                for leaves in 1:nEdges
                    add_vertex!(g)
                    newnode = nv(g)
                    add_edge!(g, currhead, newnode)
                    mkTree(maxdepth-1, p, g, newnode)
                end
            end
            g
        end
```

0.2 Rootfinding Problems

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

```
In [ ]: f! = function (x,dx)
          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
```