```
> march('open', "\\\\myfiles\\masjhd\\Maple\\RegularChains.mla"); libname := "H:\\Maple",
      libname;
  libname := "C:\Program Files\Maple 2016\lib", "\\myfiles\masjhd\Maple\RegularChains.mla"
libname := "H:\Maple", "C:\Program Files\Maple 2016\lib",                                    (1)
    "\\myfiles\masjhd\Maple\RegularChains.mla"
```

```
> with(RegularChains);
[AlgebraicGeometryTools, ChainTools, ConstructibleSetTools, Display,                        (2)
    DisplayPolynomialRing, Equations, ExtendedRegularGcd, FastArithmeticTools,
    Inequations, Info, Initial, Intersect, Inverse, IsRegular, LazyRealTriangularize,
    MainDegree, MainVariable, MatrixCombine, MatrixTools, NormalForm,
    ParametricSystemTools, PolynomialRing, Rank, RealTriangularize, RegularGcd,
    RegularizeInitial, SamplePoints, SemiAlgebraicSetTools, Separant,
    SparsePseudoRemainder, SuggestVariableOrder, Tail, Triangularize]
```

```
> with(SemiAlgebraicSetTools);
[BoxValues, Complement, CylindricalAlgebraicDecompose, Difference, DisplayParametricBox,   (3)
    DisplayQuantifierFreeFormula, EmptySemiAlgebraicSet, Intersection, IsContained,
    IsEmpty, IsParametricBox, LinearSolve, PartialCylindricalAlgebraicDecomposition,
    PositiveInequalities, Projection, QuantifierElimination, RealRootCounting,
    RealRootIsolate, RefineBox, RefineListBox, RemoveRedundantComponents,
    RepresentingBox, RepresentingChain, RepresentingQuantifierFreeFormula,
    RepresentingRootIndex, SignAtBox, VariableOrdering]
```

```
> Rq := PolynomialRing([x, c, b, a]);
                                  Rq := polynomial_ring                                     (4)
```

```
> LazyRealTriangularize([a·x^2 + b·x + c], Rq, output = piecewise);
      # A standard example, but using piecewise to avoid the degeneracies.
```

$$\begin{cases} [[a\,x^2+b\,x+c=0]] & 0 < -4\,c\,a+b^2 \ \textbf{And}\ a \neq \\ \%LazyRealTriangularize([a=0,\ a\,x^2+b\,x+c=0],\ polynomial\_ring) & a=0 \\ \%LazyRealTriangularize([-4\,a\,c+b^2=0,\ a\,x^2+b\,x+c=0],\ polynomial\_ring) & -4\,a\,c+b^2=0 \\ [\,] & otherwise \end{cases}$$

```
>
```