```
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 <____ ____>   Waterloo Maple Software.
      |        Type ? for help.

#
# solving an equation for an unknown
#
> solve(3*x - 5 = x, x);

                                       5/2

#
# naming expressions using the assignment operator
#
> expr1 := (x + y)/2;

                              expr1 := 1/2 x + 1/2 y

#
# Automatic simplification
#
> expr2 := x + x + x + x*x*x;

                                                3
                                expr2 := 3 x + x

> expr1/expr1;

                                        1

> expr2*0;

                                        0
```

```
#
# complex expressions can be used
#
> bigexpr := sin(expr1) / ln(expr2 ^ expr1);

                                    sin(1/2 x + 1/2 y)
                   bigexpr := ----------------------------
                                         3 (1/2 x + 1/2 y)
                              ln((3 x + x )               )

#
# Symbolic differentation
#
> diff( sin(ln(x^2 + 1) / 3), x);

                                          2
                              cos(1/3 ln(x  + 1)) x
                          2/3 ---------------------
                                       2
                                      x  + 1

#
# Partial derivatives
#
> (t^2 - s)/(s^3 - 1);

                                     2
                                    t  - s
                                    ------
                                     3
                                    s  - 1
```

```
> diff(",t,s);

                                                2
                                             t s
                                   - 6 ---------
                                            3     2
                                         (s  - 1)

> diff("",t);

                                              t
                                      2 ------
                                           3
                                          s  - 1

> diff(",s);

                                                2
                                             t s
                                   - 6 ---------
                                            3     2
                                         (s  - 1)

#
# Symbolic Integrals
#
> int(sin(x),x);

                                      - cos(x)

> int(arccos(x-1),x=1..t);

               2 1/2
   - (2 t - t )    - 1/2 Pi + 1/2 t Pi - t arcsin(t - 1) + arcsin(t - 1) + 1
```

```
> int(sqrt(a-x^2),x);

                                       2 1/2                  x
                    1/2 x (a - x )      + 1/2 a arcsin(----)
                                                         1/2
                                                        a

> int(exp(x^2),x);

                                     1/2
                            - 1/2 Pi    I erf(I x)

> quit
```