

```

(%i1) %pi;
(%o1)  $\pi$ 

(%i2) F(x) := cos( %pi * 0.75 * x );
(%o2)  $F(x) := \cos(\pi 0.75 x)$ 

(%i3) A(x) := cos( %pi * 1.25 * x );
(%o3)  $A(x) := \cos(\pi 1.25 x)$ 

(%i4) C(x) := -1/16 * F(0) + 9/16 * F(1) + 9/16 * F(2) - 1/16 * F(3);
(%o4)  $C(x) := \frac{-1}{16} F(0) + \frac{9}{16} F(1) + \frac{9}{16} F(2) + \frac{-1}{16} F(3)$ 

(%i5) P(x) := 1 + ((-0.13388e3)/36)*x + (9.6568/4)*x^2 +
          ((-0.57941e2)/144)*x^3;
(%o5)  $P(x) := 1 + \frac{-133.88}{36} x + \frac{9.6568}{4} x^2 + \frac{-57.941}{144} x^3$ 

(%i6) plot2d([F(x), A(x), C(x), P(x)], [x,-0.5,3.5], [y,-2.0,2.0],
             [gnuplot_preamble, "set grid;"], [gnuplot_term, ps],
             [gnuplot_out_file, "/home/dirk/Documents/Phoenix/Maxima/Find-Poly-3rd-deg_aa2.eps"]);
plot2d: some values were clipped.

(%i7) defint(F(x) * P(x), x, 0, 3);
(%o7)  $\frac{4582629\sqrt{2}\pi^3 - 2108732^{\frac{5}{2}}\pi^2 + 8691212^{\frac{11}{2}}\pi + 2897052^{\frac{15}{2}}}{9720000\pi^4} + \frac{200820\pi^2 - 231764}{30375\pi^4}$ 

(%i8) %, numer;
(%o8) 0.9772326111762973

(%i9) defint(A(x) * P(x), x, 0, 3);
(%o9)  $\frac{1673500\pi^2 - 695292}{703125\pi^4} - \frac{12729525\sqrt{2}\pi^3 + 3514552^{\frac{5}{2}}\pi^2 + 8691212^{\frac{11}{2}}\pi - 1738232^{\frac{15}{2}}}{45000000\pi^4}$ 

(%i10) %, numer;
(%o10) 0.07817443561458637

```