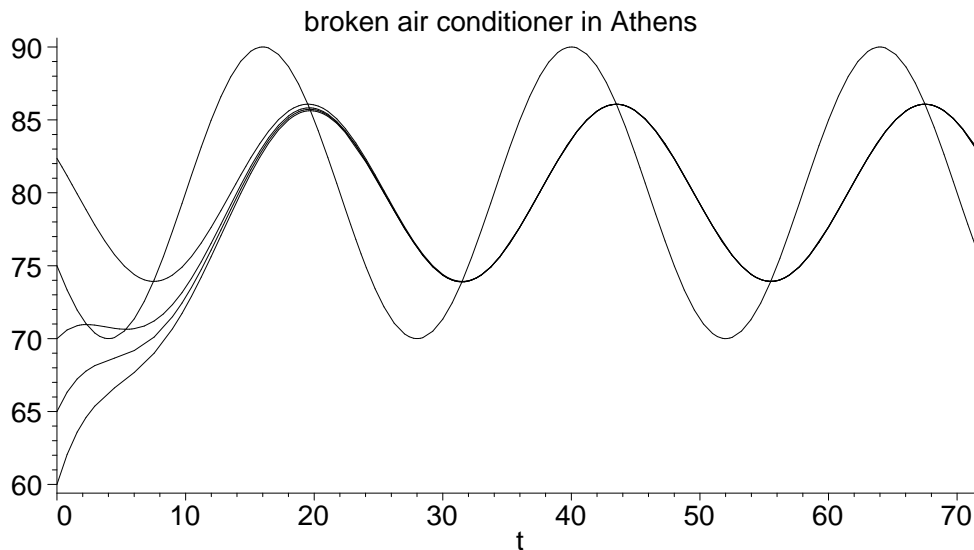


Section 1.5 computer project ideas; pages 56-58

```
[ > with(plots):
Warning, the name changecoords has been redefined
[ > a0:=80.:
  a1:=-5.:
  a2:=-5*sqrt(3.):
  omega:=evalf(Pi/12):
  k:=.2:
[ > c1:=(a1*k^2-a2*k*omega)/(k^2+omega^2);
  c2:=(a1*k*omega+k^2*a2)/(k^2+omega^2);
      c1 := 2.335105625
      c2 := -5.603607929
[ > evalf(12/Pi*arctan(-2.36/5.6));
      -1.523463189
[ > u:=(t,u0)->a0+(u0-a0-c1)*exp(-k*t)+c1*cos(omega*t)
  +c2*sin(omega*t);
  A:=t->a0+a1*cos(omega*t)+a2*sin(omega*t);
      u := (t, u0) -> a0 + (u0 - a0 - c1) e(-kt) + c1 cos(ω t) + c2 sin(ω t)
      A := t -> a0 + a1 cos(ω t) + a2 sin(ω t)
[ > usp:=t->80+2.36*cos(omega*t)-5.6*sin(omega*t);
      usp := t -> 80 + 2.36 cos(ω t) - 5.6 sin(ω t)
[ > plot({u(t,70),u(t,60),u(t,65),usp(t),
  A(t)},t=0..72,color=black,
  title='broken air conditioner in Athens');
```



[ >