

HOMework

ASSIGNMENT #1

Due Date: Thursday, February 5, 1998

Given the entity/architecture pair shown below, write VHDL code to compute the volume and surface area of a sphere of radius, r . ($Volume = \frac{4}{3} \pi r^3$, $Surface Area = 4 \pi r^2$)

```
entity sphere is
    port (rIn      : in  real;
          volOut   : out real;
          surfOut  : out real);
end sphere;

architecture behav of sphere is
    constant PI : real := 3.14159;
begin
    CalcProc:process
    begin
        -- Equations here.
        wait for 10 ns;
    end process CalcProc;
end behav;
```

- Code, Compile, and Elaborate (cv, ev)
- Using *Leapfrog* (sv), apply these radius values in succession (one every 10 ns):
 - rIn = 1.0, 2.3, 4.7, 11.844
- ◇ Turn in a hardcopy of your code and simulation results.
- ◇ Turn in an electronic copy of your code via e-mail.

Please include your Name and Student ID number on all homework submissions, including e-mail !