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, \( r \). \((\text{Volume} = \frac{4}{3}\pi r^3, \text{Surface Area} = 4\pi r^2)\)

```vhdl
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;
begnin
  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!