Problem 3.3

entity prob33 is
  generic (DEL: Time := 5 ns);
  port(x2, x1, x0: in bit;
    f: out bit);
end prob33;

architecture algorithmic of prob33 is
begin
  process (x2, x1, x0)
  variable tmp: bit_vector (2 downto 0);
  begin
    tmp := x2 & x1 & x0;
    case tmp is
      when "000" | "010" | "111" =>
        f <= '0' after DEL;
      when others =>
        f <= '1' after DEL;
    end case;
  end process;
end algorithmic;

architecture data_flow of prob33 is
begin
  f <= ((not x2) and x0) or (x2 and not(x0)) or (x2 and not(x1))
after DEL;
end data_flow;

Problem 3.5: See problem 3.4 for the code.

Problem 3.12:
  a) valid
  b) invalid: Starts with a number
  c) invalid: Reserved keyword
  d) valid
  j) invalid: Begins with an underscore

Problem 3.23
  a) valid, lion
  b) valid, 2
  c) valid, false
  d) valid, dog
  e) valid, 2