CSE 3666 - Lab 7
Jonathan Ameri

```
    # TODO:
    # instantiate x and y registers, and adder
    # reg_x =
    # reg_y =
    # adder =
    # x_init and y_init are the load_data signal to reg_x and reg_y, respectively

    reg_x = RegisterShiftLeft(x, x_init, load, x_en, clock, reset)
    reg_y = RegisterShiftRight(y, y_init, load, y_en, clock, reset)
    adder = Adder(adder_out, p, x)

    # set up control signals for registers
    @always_comb
    def comb_regs():
        p_reset.next = load
        if (y & 1) == 0:
            p_en.next = 0
        else:
            p_en.next = 1
        # TODO:
        # set the p_en signal
        # p_en.next = ...
```

```
(myhdlvenv) MacBook-Pro-4:lab6 jonathanameri$ python3 mul.py 17 36 202
load cnt prod             x               y        p_en x_en y_en done
   1   0 0000000000000000 0000000000010001 00100100    0    1    1    0
   0   1 0000000000000000 0000000000100010 00010010    0    1    1    0
   0   2 0000000000000000 0000000001000100 00001001    1    1    1    0
   0   3 0000000001000100 0000000010001000 00000100    0    1    1    0
   0   4 0000000001000100 0000000100010000 00000010    0    1    1    0
   0   5 0000000001000100 0000001000100000 00000001    1    1    1    0
   0   6 0000001001100100 0000010001000000 00000000    0    1    1    0
   0   7 0000001001100100 0000100010000000 00000000    0    1    1    0
   0   8 0000001001100100 0001000100000000 00000000    0    1    1    1
   0   8 0000001001100100 0010001000000000 00000000    0    1    1    1
17 * 36 = 612
   1   0 0000000000000000 0000000000100100 11001010    0    1    1    0
   0   1 0000000000000000 0000000001001000 01100101    1    1    1    0
   0   2 0000000001001000 0000000010010000 00110010    0    1    1    0
   0   3 0000000001001000 0000000100100000 00011001    1    1    1    0
   0   4 0000000101101000 0000001001000000 00001100    0    1    1    0
   0   5 0000000101101000 0000010010000000 00000110    0    1    1    0
   0   6 0000000101101000 0000100100000000 00000011    1    1    1    0
   0   7 0000101001101000 0001001000000000 00000001    1    1    1    0
   0   8 0001110001101000 0010010000000000 00000000    0    1    1    1
   0   8 0001110001101000 0100100000000000 00000000    0    1    1    1
36 * 202 = 7272
(myhdlvenv) MacBook-Pro-4:lab6 jonathanameri$
```