EXPERIMENT 1

Output:

```
# KERNEL: Using for loop
# KERNEL: my_array(0)=012
# KERNEL: my_array(1)=345
# KERNEL: my_array(2)=678
# KERNEL: my_array(3)=9ab
# KERNEL:
# KERNEL: Using foreach loop
# KERNEL: my_array(0)=012
# KERNEL: my_array(1)=345
# KERNEL: my_array(2)=678
# KERNEL: my_array(3)=9ab
# KERNEL:
# KERNEL:
# KERNEL: values of bits [5:4]
# KERNEL:
# KERNEL: Using for loop
# KERNEL: my_array(0)=01
# KERNEL: my_array(1)=00
# KERNEL: my_array(2)=11
# KERNEL: my_array(3)=10
```

```
# KERNEL: Using foreach loop
# KERNEL: my_array(0)=01
# KERNEL: my_array(1)=00
# KERNEL: my_array(2)=11
# KERNEL: my_array(3)=10
# KERNEL:
# KERNEL:
# KERNEL: Adding 4 to each value
# KERNEL:
# KERNEL: Using for loop
# KERNEL: my_array(0)=016
# KERNEL: my_array(1)=349
# KERNEL: my_array(2)=67c
# KERNEL: my_array(3)=9af
# KERNEL:
# KERNEL: Using foreach loop
# KERNEL: my_array(0)=016
# KERNEL: my_array(1)=349
# KERNEL: my_array(2)=67c
# KERNEL: my_array(3)=9af
# KERNEL: Simulation has finished.
```

Output:

```
# KERNEL: Row 0 of array is    0   1   2
# KERNEL: Row 1 of array is    3   4   5
# KERNEL: Row 2 of array is    6   7   8
# KERNEL: Row 3 of array is   19  20  21
```

EXPERIMENT 2

Output:

```
# KERNEL: array_1 is '{2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
# KERNEL: array_1 is '{1, 3, 5, 7, 9, 11, 13, 15, 17, 29}
# KERNEL: Values match
# KERNEL: Simulation has finished. There are no more test vectors to simulate.
# VSIM: Simulation has finished.
```

Output:

```
# KERNEL: array_1 is '{2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
# KERNEL: array_1 is '{1, 3, 5, 7, 9, 11, 13, 15, 17, 29}
# KERNEL: sum of elements in array_1 is 110
# KERNEL: sum of elements in array_2 is 110
# KERNEL: array_1 is '{}
# KERNEL: array_2 is '{1, 3, 5, 7, 9, 11, 13, 15, 17, 29, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20}
# KERNEL: Simulation has finished. There are no more test vectors to simulate.
# VSIM: Simulation has finished.
```

Output:

```
# KERNEL: queue 1 is '{3, 4, 5, 6}
# KERNEL: queue 2 is '{10, 11, 12, 13}
# KERNEL: queue 1 is '{3, 10, 4, 5, 6}
# KERNEL: queue 1 is '{3, 10, 4, 5, 10, 11, 12, 13, 6}
# KERNEL: queue 1 is '{10, 4, 5, 10, 11, 12, 13, 6}
# KERNEL: queue 1 is '{20, 10, 4, 5, 10, 11, 12, 13, 6}
# KERNEL: queue 1 is '{20, 10, 4, 5, 10, 11, 12, 13}
# KERNEL: queue 1 is '{20, 10, 4, 5, 10, 11, 12, 13, 30}
# KERNEL: queue 1 is '{10, 4, 5, 10, 11, 12, 13, 30}
# KERNEL: Simulation has finished. There are no more test vectors to simulate.
# VSIM: Simulation has finished.
```

EXPERIMENT3

Output:

```
# KERNEL: 15 ip is 0 op is 0
# KERNEL: 25 ip is 1 op is 0
# KERNEL: 35 ip is 1 op is 1
# KERNEL: 45 ip is 1 op is 1
# KERNEL: 55 ip is 1 op is 1
# KERNEL: 65 ip is 1 op is 1
# KERNEL: 75 ip is 1 op is 1
# KERNEL: 85 ip is 0 op is 1
# KERNEL: 95 ip is 1 op is 0
# KERNEL: 105 ip is 1 op is 1
# KERNEL: Success
```

Output:

```
# KERNEL: ip is  9, 2, 0 op is 11
# KERNEL: ip is  4, 0, 1 op is  5
# KERNEL: ip is  0, 4, 1 op is  5
# KERNEL: ip is  3, 1, 1 op is  5
# KERNEL: ip is  8, 6, 1 op is 15
# KERNEL: ip is 12, 6, 1 op is 19
# KERNEL: ip is  3, 2, 1 op is  6
# KERNEL: ip is  0, 9, 0 op is  9
# KERNEL: ip is  8, 0, 1 op is  9
# KERNEL: ip is  8, 6, 1 op is 15
# KERNEL: Success
```

EXPERIMENT 4

Output:

```
# KERNEL: value written is  36 at   0
# KERNEL: value written is 129 at   1
# KERNEL: value written is   9 at   2
# KERNEL: value written is  99 at   3
# KERNEL: value written is  13 at   4
# KERNEL: value written is 141 at   5
# KERNEL: value written is 101 at   6
# KERNEL: value written is  18 at   7
# KERNEL: value written is   1 at   8
# KERNEL: value written is  13 at   9
# KERNEL: the data out is  36 at   0
# KERNEL: the data out is 129 at   1
# KERNEL: the data out is   9 at   2
# KERNEL: the data out is  99 at   3
# KERNEL: the data out is  13 at   4
# KERNEL: the data out is 141 at   5
# KERNEL: the data out is 101 at   6
# KERNEL: the data out is  18 at   7
# KERNEL: the data out is   1 at   8
# KERNEL: the data out is  13 at   9
```

EXPERIMENT 5

Output:

```
# KERNEL:
# KERNEL: TASK ADD
# KERNEL: success in addition
# KERNEL:
# KERNEL: STATIC INCREMENT
# KERNEL: value of static variable is          5
# KERNEL: value of static variable is         10
# KERNEL: value of static variable is         15
# KERNEL:
# KERNEL: AUTOMATIC INCREMENT
# KERNEL: value of automatic variable is          5
# KERNEL: value of automatic variable is          5
# KERNEL: value of automatic variable is          5
# KERNEL:
# KERNEL: ADD FUNCTION
# KERNEL: success in add function
# KERNEL:
# KERNEL: TIME PRINT FUNCTION
# KERNEL: simulation time is 0
```

Output:

```
# KERNEL: @time : 0 - static variable is 0, auto variable is 0
# KERNEL: @time : 10 - static variable is 1, auto variable is 1
# KERNEL: @time : 10 - static variable is 1, auto variable is 0
# KERNEL: @time : 20 - static variable is 0, auto variable is 1
# KERNEL: @time : 20 - static variable is 0, auto variable is 0
# KERNEL: @time : 30 - static variable is 1, auto variable is 1
```