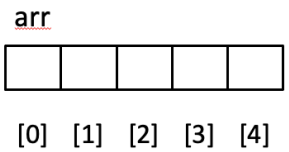
CS31 Worksheet: Week 3 C Arrays and Digital Circuits

Arrays

- C's support for collections of values
- Often accessed via a loop:

```
int arr[5];  // an array of 5 integers
float rates[40]; // an array of 40 floats
for (i=0; i < 5; i++) {
   arr[i] = i;
   rates[i] = arr[i]*2;
}
```



What does this for loop print?

Get/Set value using brackets [] to index into array.

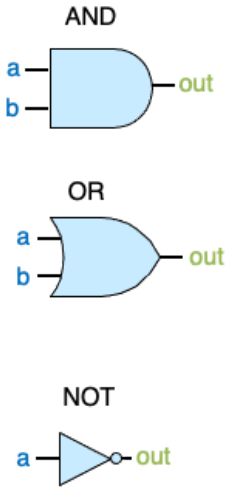
What will this print?

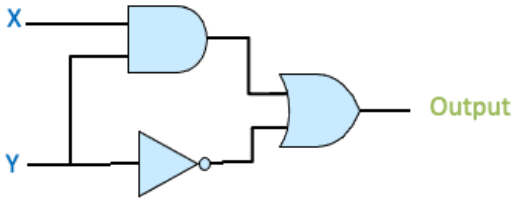
```
int func(int a, int y, int my_array[]) {
   y = 1;
   my_array[a] = 0;
   my_array[y] = 8;//DRAW STACK DIAGRAM AT THIS POINT
   return y;
}

int main() {
   int x;
   int values[2];

   x = 0;
   values[0] = 5;
   values[1] = 10;

   x = func(x, x, values);

   printf("%d, %d, %d", x, values[0], values[1]);
}
```

A. 0, 5, 8
B. 0, 5, 10
C. 1, 0, 8
D. 1, 5, 8
E. 1, 5, 10

Hint: What does the name of an array mean to the compiler?

Q3. What does this circuit output?

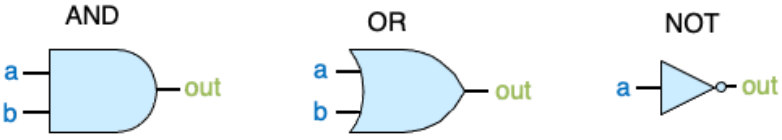




Clicker Choices

X	Y	Out_A	Out_B	Out_C	Out_D	Out_E
0	0	0	1	0	1	0
0	1	0	1	0	0	1
1	0	1	0	1	1	1
1	1	0	0	1	1	0

Q4. Using AND, OR and NOT gates, draw out an XOR Circuit



A	B	A ^ B
0	0	0
0	1	1
1	0	1
1	1	0