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1. What is printed when the following program is executed? **1 / 1 p**

```
1   func main() {
2     x := []int {4, 8, 5}
3     y := -1
4     for _, elt := range x {
5       if elt > y {
6         y = elt
7       }
8     }
9     fmt.Print(y)
10  }
11
```

- ○ 4
- ◉ 8
- ○ 5
- ○ -1

Correct
That's correct! The program scans the slice x and assigns y to the largest value in x. The largest value is 8.

2. What is printed when the following program is executed? **0 / 1 p**

```
1   func main() {
2     x := [...]int {4, 8, 5}
```

```
3     y := x[0:2]
4     z := x[1:3]
5     y[0] = 1
6     z[1] = 3
7     fmt.Print(x)
8   }
9
```

- [1 3 8]
- [1 8 3]
- [4 1 3]
- [4 8 5]

Incorrect

Incorrect: Look carefully at how the slices are defined and which elements of the underlying matrix the slices point to. You may want to review Lectures M3.1.1 and M3.1.2, which address arrays and slices, if necessary.

3. What is printed when the following program is executed? **1 / 1 p**

```
1   func main() {
2     x := [...]int {1, 2, 3, 4, 5}
3     y := x[0:2]
4     z := x[1:4]
5     fmt.Print(len(y), cap(y), len(z), cap(z))
6   }
7
```

- 2 5 3 4
- 2 4 3 4
- 2 3 3 4
- 2 5 3 5

Correct

That't correct! The program creates two slices y and z and prints out their lengths and capacities. The length of each slice is the difference between its declared indices, so len(y) = 2 and len(z) = 3. The capacities are the difference between the length of the underlying array (len(x) = 5) and the starting index of the slice. So cap(y) = 5 and cap(z) = 4.

4. What is printed when the following program is executed? **1 / 1 p**

```
1   func main() {
2     x := map[string]int {
3       "ian": 1, "harris": 2}
4     for i, j := range x {
5       if i == "harris" {
6         fmt.Print(i, j)
7       }
8     }
9   }
10
```

- ○ harris1
- ○ 1ian
- ○ 1harris
- ◉ harris2

Correct

That's correct! The program makes a map containing two key,value pairs: (“ian”, 1) and (“harris”, 2). The loop searches for the key “harris” and prints
the key “harris” together with its value 2.

5. What is printed when the following program is executed? **1 / 1 p**

```
1   type P struct {
2       x string
3   y int
4   }
5   func main() {
6     b := P{"x", -1}
7     a := [...]P{P{"a", 10},
8           P{"b", 2},
```

```
 9           P{"c", 3}}
10     for _, z := range a {
11       if z.y > b.y {
12         b = z
13       }
14     }
15     fmt.Println(b.x)
16   }
17
```

- (●) a
- ( ) b
- ( ) c
- ( ) x

Correct

That's correct! The program defines a new structure type called P which has two fields, x and y. The program then creates an array a of structures of type P. The loop checks each structure in the array and assigns b to the structure in the array with the largest value of y. The x field of the struct with the largest y value is printed. Since {“a”, 10} has the largest y value, “a” is printed.

6. What is printed when the following program is executed? **1 / 1 p**

```
1   func main() {
2     s := make([]int, 0, 3)
3     s = append(s, 100)
4     fmt.Println(len(s), cap(s))
5   }
6
```

- (●) 1 3
- ( ) 0 3
- ( ) 1 1
- ( ) 1 4

Correct

That's correct! The program first creates a slice s with length 0 and capacity 3. Then the program appends an element to the slice which increases its length to 1, but does not change its capacity since the adding the element did not require the capacity to increase.