CSC 209 Review 4 Solution

August 19, 2020

1. The answer is `a) *p` and `g) *&i`.

   Notes

   - **Address and Indirection Pointers**
     - If `x` is a variable, `&x` points to its memory address
     - * in `*p` is called **Indirection operator**
       * Allows variable to gain access to the object pointed by `p`
   - **Aliases**
     - Is the situation where the value in same memory location can be accessed using different variable names.

       Example 1:

       ```
       int i, p*;
       p = & i;
       printf("%d\n", *p); /* *p is an alias of i */
       ```

       Example 2:

       ```
       int i, p*;
       p = *&i /* *p is an alias of i */
       ```

2. The answers are `b) *p = &i;`, `f) p = q;`, and `i) *p = *q;`

   Notes

   - **Pointer Assignment**

– The following is an example of correct pointer assignment

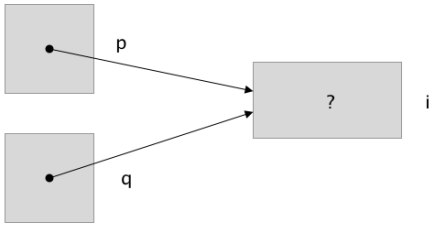
```
int i, j, *p. *q;
p = &i;
```

  * Means the memory address of `p` is pointing to memory address of `i`

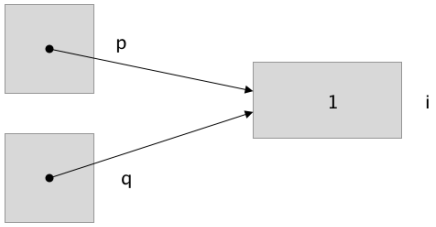
– The following is another valid example of pointer assignment

```
int i, j, *p. *q;
p = &i;
q = p;
```

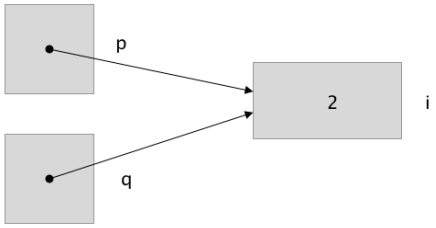
  * Means memory address of `q` is the memory address of `p` (which is the memory address of `i`)




```
*p = 1;
```




```
*p = 2;
```

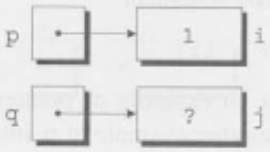


– The following is not a pointer assignment

```
*q = *p
```

  * It copies the value that `p` points to

```
p = &i;
q = &j;
i = 1;
```




```
*q = *p;
```