ICP Final solution

1 [Lecture on Statements, pp 2~3]

The variable **z** cannot be initialized in the true part, since it is visible in the false part.

There are several ways to correct it. Any of the following four versions is OK.

1) // uninitializ **z** in the true part

```
switch (a<b) {
case true: int z; z=a; a=b; b=z; break;
case false:;
}
```

2) // enclose **z** in a block statement, making it invisible in the false part

```
switch (a<b) {
case true: { int z=a; a=b; b=z; break; }
case false:;
}
```

3) // reverse the order of the true and false parts, making **z** invisible in the false part

```
switch (a<b) {
case false:;
case true: int z=a; a=b; b=z; break;
}
```

4) // remove the false part

```
switch (a<b) {
case true: int z=a; a=b; b=z; break;
}
```

2 **122**
223

3 a) **ptrdiff_t**
b) **int *(*)[3]**

4 a) **7**
b) **-3**

5 a)
```
node* p=(node*)malloc(sizeof(node));
p->datum=2;
p->succ=head;
head=p;
```
b)
```
node* p=head;
head=head->succ;
free(p);
```

6 a) `int*(*a)[3]` or `int*a[][3]`

b)
```
int* cc[3]={c[0],c[1],c[2]};
print(&cc,2);
```

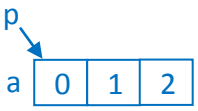
7
```
int i=1;
loop: if (i>9) goto exit;
print("%d",i);
i++;
goto loop;
exit:;
```

8 Lecture on Statements, p14

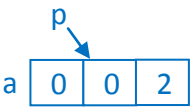
9 Lecture on Pointers and arrays, p14
Any of the three versions is OK.

10 Lecture on Pointers and arrays, p26

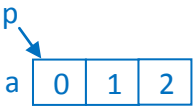
11 a) value: 1



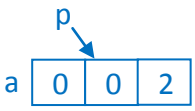
b) value: 1



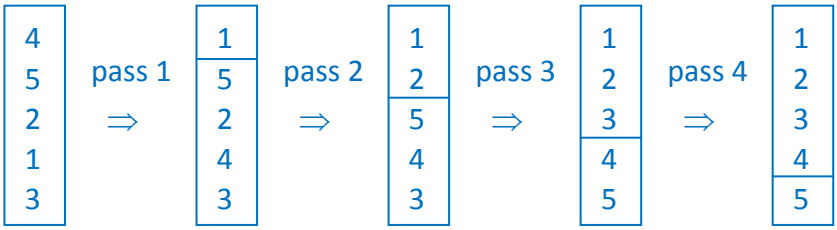
c) value: 0



d) value: 0



12 a)



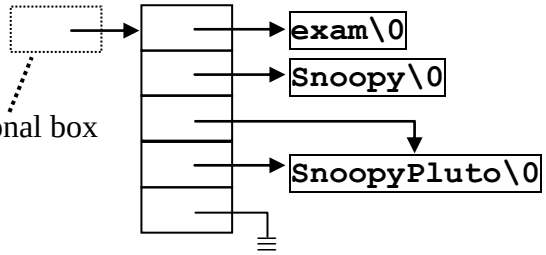
Note: Accept the answer that selects the maximum element over each pass.

12 (Cont'd)

b) Pass 1: 3:1, 1:2, 1:5, 1:4
Pass 2: 3:2, 2:5, 2:4
Pass 3: 3:5, 3:4
Pass 4: 5:4
Note: Accept the answer that moves down the maximum element over each pass.

13 a) 4

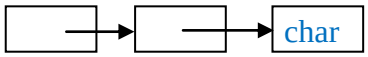
b) argv



// or, `exam.exe\0`

optional box

c)



14 a) Lecture on Pointers and arrays, p15

b) [Lecture on Pointers and arrays, pp2,3]
Any of the following two versions is OK.

// Version A

```
void swap(int& p,int& q)
{
    int r=p; p=q; q=r;
}
swap(a[i],a[k])
```

// Version B

```
void swap(int* p,int* q)
{
    int r=*p; *p=*q; *q=r;
}
swap(&a[i],&a[k])    or   swap(a+i,a+k)
```

c) 123