UPPSALA UNIVERSITY
DEPARTMENT OF INFORMATION TECHNOLOGY

COMPUTER SYSTEMS/OPERATING SYSTEMS
Fall, 2007

IN-CLASS EXERCISE 3

1. What is the output of the following code segment?

```
int i = 0;
char c[5] = "game";     //c is assigned the address 5000.
char *cPtr = c;

while(i < strlen(c)) {
  printf("%c", *cPtr);
  cPtr++;
  i++;
}

printf("\n cPtr is %u\n", cPtr);
```

2. What is the output of the following code segment?

```
#define SIZE 4

int
main(int argc, char *argv[])
{
  int i = 0;
  int c[SIZE]  = {0, 1, 2, 3}; //c is assigned the address 5000.
  int *cPtr = c;

  printf(" The value of c is %u\n", c);
  printf(" The value of cPtr is %u\n", cPtr);

  while(i < SIZE) {
    printf("%i\t", *cPtr);
    cPtr++;
    i++;
  }

  printf("\n cPtr is %u\n", cPtr);
}
```

3. For the diagram on slide 45 (copied below), assume that you have not yet freed `ptr`. Show how you would write the value 25 to address 6008.

   (a) Using pointer arithmetic.

(b) Using `ptr` as the address of an array.

```
int *ptr;
ptr = (int*)malloc(4 * sizeof(int));
*ptr=4;
```