

# CS154 Spring 2010 Homework #9 Due date Friday, May 14th

## Problem 1:

```
pid_t pid;
int accum = 0;

void handler1(int sig) {
    accum += 2;
    printf("accum = %d\n", accum);
    fflush(stdout); /* Flushes the printed string to stdout */
    kill(pid, SIGUSR1);
}

void handler2(int sig) {
    accum += 5;
    printf("accum = %d\n", accum);
    exit(0);
}

int main() {
    signal(SIGUSR1, handler1);
    if ((pid = fork()) == 0) {
        signal(SIGUSR1, handler2);
        kill(getppid(), SIGUSR1);
        while(1) {};
    } else {
        pid_t p; int status;
        if ((p = wait(&status)) > 0) {
            accum += 3;
            printf("accum = %d\n", accum);
        }
    }
}
```

What is the output of this program?

**Problem 2:**

```
int counter = 0;

void handler(int sig) {
    counter++;
}

int main() {
    int i;

    signal(SIGCHLD, handler);

    for (i = 0; i < 5; i++) {
        if (fork() == 0) {
            exit(0);
        }
    }

    /* wait for all children to die */
    while (wait(NULL) != -1);

    printf("counter = %d\n", counter);
    return 0;
}
```

- A. Does the program output the same value of counter every time we run it?
- B. If the answer to A is Yes, indicate the value of the counter variable. Otherwise, list all possible values of the counter variable.