

Problem 57. (8 points):

This problem tests your understanding of exceptional control flow in C programs.
For problems A-C, indicate how many “hello” output lines the program would print.
Caution: Don’t overlook the printf function in main.

Problem A

```
void doit() {  
    fork();  
    fork();  
    printf("hello\n");  
    return;  
}
```

Answer: _____ output lines.

```
int main() {  
    doit();  
    printf("hello\n");  
    exit(0);  
}
```

Problem B

```
void doit() {  
    if (fork() == 0) {  
        fork();  
        printf("hello\n");  
        exit(0);  
    }  
    return;  
}
```

Answer: _____ output lines.

```
int main() {  
    doit();  
    printf("hello\n");  
    exit(0);  
}
```

Problem C

```
void doit() {  
    if (fork() == 0) {  
        fork();  
        printf("hello\n");  
        return;  
    }  
    return;  
}
```

Answer: _____ output lines.

```
int main() {  
    doit();  
    printf("hello\n");  
    exit(0);  
}
```

For problem E, indicate the value of the `counter` variable that the program would print.

Problem D

```
int counter = 1;

int main() {

    if (fork() == 0) {
        counter--;
        exit(0);
    }
    else {
        wait(NULL);
        counter++;
        printf("counter = %d\n", counter);
    }
    exit(0);
}
```

Answer: counter = ____.