Practice Problems on Fork()

1. Find outputs of the following code.

```
main(){
        fork();
        fork();
        printf("hi\n");
        fork();
        printf("hello\n");
        fork();
        printf("bye\n");
}
```

2. Find outputs of the following code.

```
main(){
        fork();
        fork();
        c=fork();
        if(c>0){
                printf("hi\n");
                fork();
        }
        fork();
        printf("bye\n");
}
```

3. Find outputs of the following code.

```c
int main(){
        pid_t p;
        int a=3;
        int b=11;
        char s[20];
        p=fork();
        if(p<0){
                printf("fork failed\n");
        }
        else if(p==0){
                strcpy(s,"child");
                a=a*b;
                b=b/a;
        }
        else{
                wait();
                strcpy(s,"parent");
                a=a+b;
                b=b-a;
        }
        printf("%s is printing a= %d\n",s,a);
        printf("%s is printing b= %d\n",s,b);

        return 0;
}
```

4. Find outputs of the following code.

```c
static int a=5;
static int b=3;
int main(){
        pid_t x, y;
        x=fork();
        if(x<0){
                printf("fork failed\n");
        }
        else if(x>0){
                a=a+5;
                b=b-5;
                wait();
                y=fork();
                if(y<0){
                        printf("fork failed\n");
                }
                else if(y>0){
                        wait();
                        a=a-2;
                        b=b+2;
                }
                else{
                        a=a*2;
                        b=b/3;
                }
        }
        else{
                a=a/2;
                b=b*3;
        }
        printf("a= %d\n",a);
        printf("b= %d\n",b);

        return 0;
}
```