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.

```
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.

```
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;
}
```