

## Lab Assignment 3 Solutions

1.     sum([ ],0).

```
sum([X | L], S) :-  
    sum(L, SL),  
    S is X + SL.
```

```
last_element([E], E).
```

```
last_element([_|T], E) :-  
    last_element(T, E).
```

```
last_earns(X, E) :-
```

```
    earns(Y, E),  
    last_element(Y, X).
```

```
family_total(X, S) :-
```

```
    bagof(M, last_earns(X, M), L),  
    sum(L, S).
```

2.     min(A, B, A) :-

```
    A < B.
```

min(A, B, B) :-

```
    A >= B.
```

```
list_min(X, [X]).
```

```
list_min(X, [H|T]) :-  
    list_min(M, T),  
    min(M, H, X).
```

```
contains_min(L1, L2) :-
```

```
    member(X, L1),  
    list_min(X, L2).
```