

Polynomial Manipulation

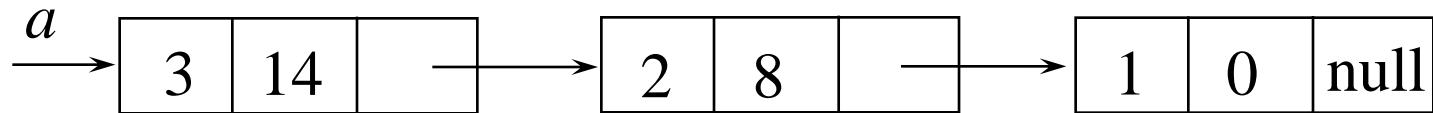
The required memory declarations for the representation of a polynomial with integer coefficients are

```
typedef struct nodetype  
{  
    int coeff;  
    int power;  
    struct nodetype *next;  
}node;  
node *poly;
```

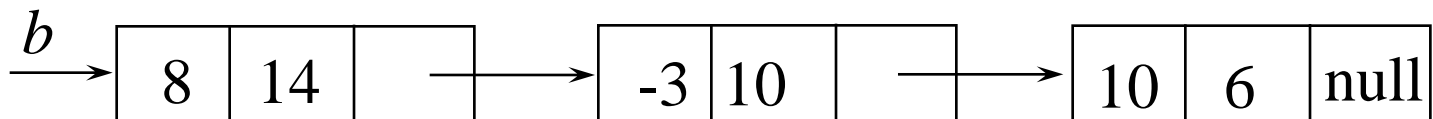
Polynomial Representation: Example

- **Examples**

$$a = 3x^{14} + 2x^8 + 1$$

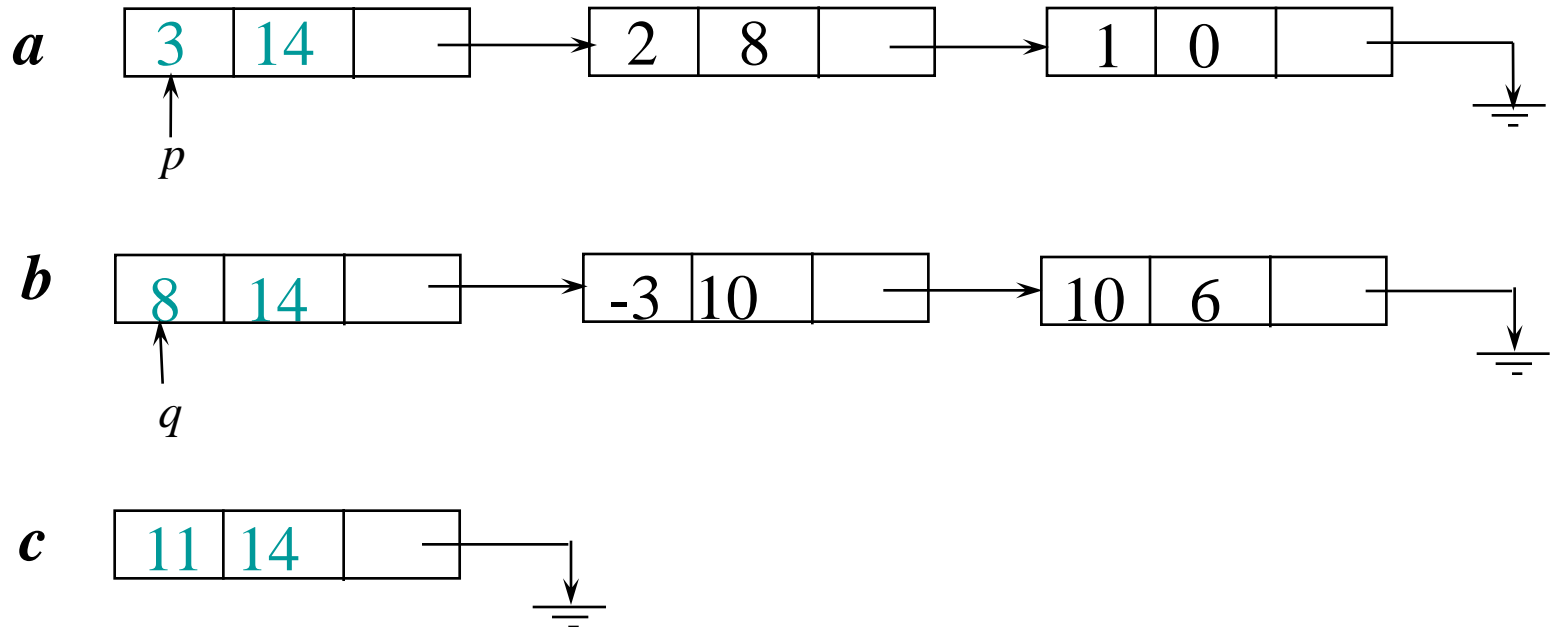


$$b = 8x^{14} - 3x^{10} + 10x^6$$



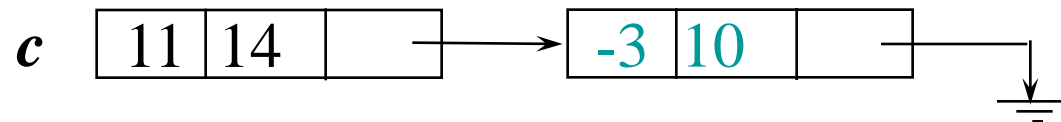
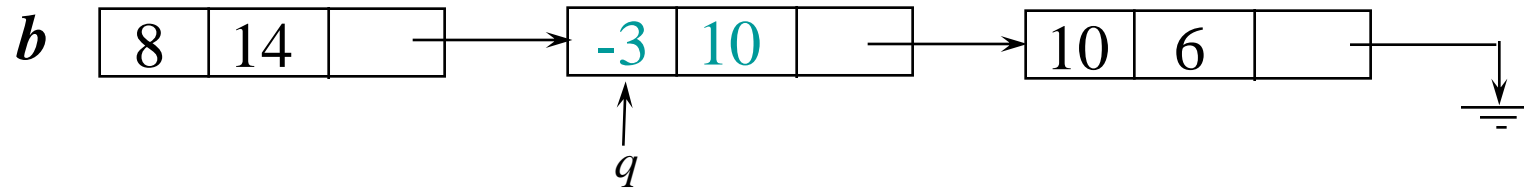
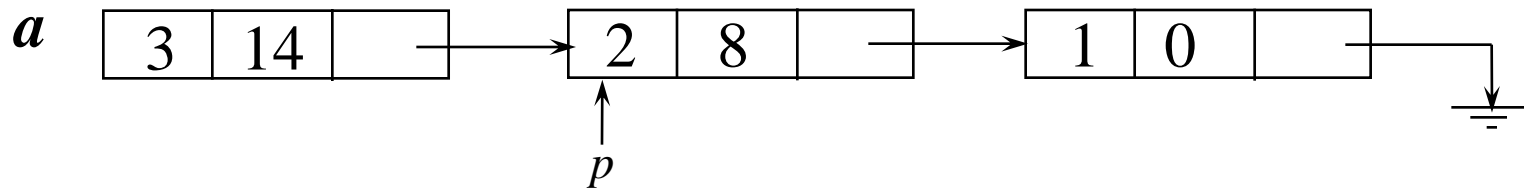
▪ Adding Polynomials: Figure 4:19 $c = a + b$

Case 1: $p \rightarrow \text{exp} = q \rightarrow \text{exp}$



Adding Polynomials : $c = a + b$ (cont.)

Case 2: $p \rightarrow \text{exp} < q \rightarrow \text{exp}$



Adding Polynomials: $c = a + b$ (cont.)

Case 3: $p \rightarrow \text{exp} > q \rightarrow \text{exp}$

