

多项式反三角函数

首先,有

$$\int dx \arcsin x = \frac{1}{\sqrt{1-x^2}}$$

$$\int dx \arctan x = \frac{1}{1+x^2}$$

根据这个式子,将多项式代入,再积分,就有

$$B(x) = \int \frac{A'(x)}{\sqrt{1-A(x)^2}}$$

$$B(x) = \int \frac{A'(x)}{1+A(x)^2}$$

所以只需要多项式求导,求逆,开根,积分就能完成反三角函数的求解.

代码模板

```
```cpp IL void PolyArcsin(LL a[],LL b[],LL len){
```

```
 reg int i=0;
 PolyDx(a,p,len);
 PolyMul(a,a,q,len,len);
 for (i=0;i<=len;i++) q[i]=(MOD-q[i])%MOD;
 q[0]=Upd(q[0]+1-MOD);
 PolySqrt(q,w,len);
 memset(q,0,sizeof(q));
 PolyInv(w,q,len); PolyMul(p,q,p,len,len);
 PolyInte(p,b,len);
```

```
}
```

```
IL void PolyArctan(LL a[],LL b[],LL len){
```

```
 PolyDx(a,p,len);
 PolyMul(a,a,q,len,len);
 q[0]=(q[0]+1)%MOD;
 PolyInv(q,w,len); PolyMul(p,w,p,len,len);
 PolyInte(p,b,len);
```

```
} ````
```

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