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Finding sums and products of complex roots of a polynomial

TI-84 Plus

After you find the roots of the polynomial press F4 STO to store the solutions in a list.

```
a4X^4+...+a1X+a0=0
a4=1
a3=-3
a2=11
a1=17
a0=-4
```

MAIN MODE CLR LOAD SOLVE

```
a4X^4+...+a1X+a0=0
x1=2.02+3.37i
x2=2.02-3.37i
x3=-1.24
x4=.21
```

MAIN MODE COEF STO

```
sum(LA)          3
Prod(LA)         -4
```

Casio fx-9860GII

Solutions are stored in a matrix. Assign Ply Result to a matrix and then store this column matrix as a list.

```
a0X^4+a1X^3+...+a4=0
a0 a1 a2 a3 →
C 1 -3 11 17

1
SOLV DEL CLR EDIT
```

```
a0X^4+a1X^3+...+a4=0
X1 0.2086
X2 -1.242
X3 2.0169+3.3707i
X4 2.0169-3.3707i

0.2086227941
REPT
```

```
Ply Result → Mat A
0.2086227941
-1.242586373
2.01698179+3.370754i
2.01698179-3.370754i
Mat → List(Mat A, 1) → Li:
(0.2086227941, -1.242586373)
List L → M Dim Fill Seq
```

```
Mat → List(Mat A, 1) → Li:
(0.2086227941, -1.242586373)
Sum List 1          3
Prod List 1         -4
List L → M Dim Fill Seq
```

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```

a5x^5+...+a1x+a0=0
a5=3
a4=11
a3=-4
a2=5
a1=-13
a0=
(MAIN)(MODE)(CLR)(LOAD)(SOLVE)

```

```

a5x^5+...+a1x+a0=0
x1=-4.15
x2=-.43+1.04i
x3=-.43-1.04i
x4=.67+.35i
x5=.67-.35i
(MAIN)(MODE)(COEF)(STD)

```

```

sum(LB)
-3.666666667
Ans→Frac
-11/3
Prod(LB)

```

Neither **c** nor **d** can be solved using Plysmlt2 on the TI-84 Plus.

```

a0x^5+a1x^4+...+a5=0
a0 a1 a2 a3 →
C  E  11 -4 5
3
(SOLVE)(DEL)(CLR)(EDIT)

```

```

a0x^5+a1x^4+...+a5=0
x1 [-4.150]
x2 0.6705+0.3453i
x3 0.6705-0.3453i
x4 -0.426+1.0427i
x5 -0.426-1.0427i
-4.154643692
(REPT)

```

```

Poly Result→Mat B
-4.154643692
0.6705467848+0.34536i
0.6705467848-0.34536i
-0.4265582719+1.0427i
-0.4265582719-1.0427i
Mat M→L Det Trn RUS

```

```

Mat→List(Mat B,1)→Li:
(-4.154643692,0.6705i)
Sum List 2
-3.666666667
Prod List 2
-3
List L→M Dim Fill Seq

```

Neither **c** nor **d** can be solved using the Polynomial solver on the Casio.