

Clase C.E.

```
E=EllipticCurve([0,-1,1,-10,-20]);
```

```
E.c4()
```

```
E.discriminant()
```

```
factor(-161051)
```

```
E.conductor()
```

```
E.local_data()
```

```
E
```

```
E.has_cm()
```

```
Lambda=E.period_lattice()
```

```
Lambda
```

```
Lambda.basis()
```

```
E.torsion_points()
```

```
E.two_descent()
```

```
E.analytic_rank()
```

```
E.root_number()
```

```
E.tamagawa_numbers()
```

```
E.prove_BSD()
```

```
E.anlist(100)
```

```
E.q_expansion(100)
```

```
E.ap(5)
```

```
E2=EllipticCurve([1,-1,0,-79,289])
```

```
E2.conductor()
```

```
factor(234446)
```

```
E2.local_data()
```

```
E2.two_descent()
```

```
E2.analytic_rank()
```

```
E2.gens()
```

```
E2.prove_BSD()
```

```
E2.heegner_discriminants(100)
```

```
P=E2.heegner_point(-7)
```

```
P.point_exact(prec=200)
```

```
E2.torsion_points()
```

```
E3=EllipticCurve('3879h2')
```

```
factor(3879)
```

```
E3.local_data()
```

```
E3
```

```
E3.analytic_rank()
```

```
E3.gens()
```

```
E3.heegner_discriminants(50)
```

```
P3=E3.heegner_point(-35)
```

```
Q3=P3.point_exact(prec=2000)
```

```
Q3
```

```
Q3.parent()
```

```
H.<a>=QQ.extension(x^2 - 31175506233152986480443392640*x
+2852019750447497486262003538141774337195168858431590400)
```

```
EH=EllipticCurve(H,[1,-1,0,-34911,-2501928])
```

```
Q3conj=EH(1/423991488792912568422400*(-a+31175506233152986480443392640),335055842883802592459611398276097059
/524095985481430923568483317323528515343046998672236544000*(-a+31175506233152986480443392640)-
2105790791399495458387824140776612164419/35959280012805711568821983005107200)
```

```
Q3+Q3conj
```

```
E3.heegner_index(-35)
```

```
Gen=E3.gens()[0]
```

```
Gen
```

```
2*Gen
```

```
E4=EllipticCurve([0,0,0,-24649,0])
```

```
E4.gens()
```

```
E4.heegner_discriminants(100)
```

```
P4=E4.heegner_point(-31)
```

```
Q4=P4.point_exact(prec=2000)
```

