

```
dat_gen(7)
```

```
We are working in F_7
```

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~~~~~
```

```
Beginning r = 2
```

```
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
```

```
-----
```

```
Order found!
```

```
order = 6
```

```
-----
```

```
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
```

```
-----
```

```
Order found!
```

```
order = 6
```

```
-----
```

```
3
```

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dat_gen(11)
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```
We are working in F_11
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~~~~~
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```
Beginning r = 2
```

```
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
```

```
-----
```

```
Order found!
```

```
order = 5
```

```
-----
```

```
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
```

```
-----
```

```
Order found!
```

```
order = 5
```

```
-----
```

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~~~~~
```

```
Beginning r = 3
```

```
Trying to calculate order of  $y - 1$  modulo  $y^2 + y + 1$ 
```

```
-----
```

```
Order found!
```

```
order = 60
```

```
-----
```

```
Trying to calculate order of  $y^2 - 1$  modulo  $y^2 + y + 1$ 
```

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-----
```

```
Order found!
```

```
order = 60
```

```
-----
```

```
4
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```
dat_gen(13)
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```
We are working in F_13
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~~~~~
```

```
Beginning r = 2
```

```
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
```

```
-----
```

```
Order found!
```

```
order = 12
```

```
-----
```

```
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
```

```

-----
Order found!
order = 12
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y + 4$ 
-----
Order found!
order = 4
-----
Trying to calculate order of  $y - 1$  modulo  $y - 3$ 
-----
Order found!
order = 12
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y + 4$ 
-----
Order found!
order = 12
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y - 3$ 
-----
Order found!
order = 4
-----
4

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dat_gen(17)
We are working in F_17
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 8
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 8
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 96
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 96
-----
~~~~~
Beginning r = 4

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Trying to calculate order of  $y - 1$  modulo  $y + 4$ 
-----
Order found!
order = 16
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 8
-----
Trying to calculate order of  $y - 1$  modulo  $y - 4$ 
-----
Order found!
order = 16
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 4$ 
-----
Order found!
order = 16
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 8
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y - 4$ 
-----
Order found!
order = 16
-----
5

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dat_gen(19)
We are working in F_19
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 9
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 9
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y - 7$ 
-----
Order found!
order = 9
-----
Trying to calculate order of  $y - 1$  modulo  $y + 8$ 
-----
Order found!

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order = 18
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y - 7$ 
-----
Order found!
order = 18
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y + 8$ 
-----
Order found!
order = 9
-----
~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 9
-----
Trying to calculate order of  $y - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 72
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 9
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 72
-----
5

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dat_gen(23)
We are working in F_23
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 22
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 22
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 132

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-----
Trying to calculate order of  $y^2 - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 132
-----
~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 22
-----
Trying to calculate order of  $y - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 88
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 22
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 88
-----
5

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dat_gen(29)
We are working in F_29
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 28
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 28
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 168
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 168
-----

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~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 12$ 
-----
Order found!
order = 7
-----
Trying to calculate order of  $y - 1$  modulo  $y - 12$ 
-----
Order found!
order = 28
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 28
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 12$ 
-----
Order found!
order = 28
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y - 12$ 
-----
Order found!
order = 7
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 28
-----
5

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dat_gen(31)
We are working in F_31
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 10
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 10
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y + 6$ 
-----
Order found!
order = 30
-----
Trying to calculate order of  $y - 1$  modulo  $y - 5$ 

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-----
Order found!
order = 5
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y + 6$ 
-----
Order found!
order = 5
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y - 5$ 
-----
Order found!
order = 30
-----
~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 10
-----
Trying to calculate order of  $y - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 40
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 10
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 40
-----
5

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dat_gen(37)
We are working in F_37
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 36
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 36
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y + 11$ 
-----

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Order found!
order = 18
-----
Trying to calculate order of  $y - 1$  modulo  $y - 10$ 
-----
Order found!
order = 9
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y + 11$ 
-----
Order found!
order = 9
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y - 10$ 
-----
Order found!
order = 18
-----
~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 6$ 
-----
Order found!
order = 18
-----
Trying to calculate order of  $y - 1$  modulo  $y - 6$ 
-----
Order found!
order = 36
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 36
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 6$ 
-----
Order found!
order = 36
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y - 6$ 
-----
Order found!
order = 18
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 36
-----
~~~~~
Beginning r = 5
Trying to calculate order of  $y - 1$  modulo  $y^4 + y^3 + y^2 + y + 1$ 
-----
Order found!
order = 13680

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-----
Trying to calculate order of  $y^4 - 1$  modulo  $y^4 + y^3 + y^2 + y + 1$ 
-----
Order found!
order = 13680
-----

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6

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dat_gen(41)
We are working in F_41
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 20
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 20
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 48
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 48
-----
~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 20
-----
Trying to calculate order of  $y - 1$  modulo  $y - 9$ 
-----
Order found!
order = 20
-----
Trying to calculate order of  $y - 1$  modulo  $y + 9$ 
-----
Order found!
order = 10
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 20
-----

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```

Trying to calculate order of  $y^3 - 1$  modulo  $y - 9$ 
-----
Order found!
order = 10
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 9$ 
-----
Order found!
order = 20
-----
~~~~~
Begining r = 5
Trying to calculate order of  $y - 1$  modulo  $y + 4$ 
-----
Order found!
order = 20
-----
Trying to calculate order of  $y - 1$  modulo  $y - 18$ 
-----
Order found!
order = 40
-----
Trying to calculate order of  $y - 1$  modulo  $y - 16$ 
-----
Order found!
order = 40
-----
Trying to calculate order of  $y - 1$  modulo  $y - 10$ 
-----
Order found!
order = 4
-----
Trying to calculate order of  $y^4 - 1$  modulo  $y + 4$ 
-----
Order found!
order = 4
-----
Trying to calculate order of  $y^4 - 1$  modulo  $y - 18$ 
-----
Order found!
order = 40
-----
Trying to calculate order of  $y^4 - 1$  modulo  $y - 16$ 
-----
Order found!
order = 40
-----
Trying to calculate order of  $y^4 - 1$  modulo  $y - 10$ 
-----
Order found!
order = 20
-----

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6

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dat_gen(43)
We are working in F_43

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~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 7
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 7
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y - 6$ 
-----
Order found!
order = 42
-----
Trying to calculate order of  $y - 1$  modulo  $y + 7$ 
-----
Order found!
order = 7
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y - 6$ 
-----
Order found!
order = 7
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y + 7$ 
-----
Order found!
order = 42
-----
~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 7
-----
Trying to calculate order of  $y - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 56
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 7
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 56
-----

```

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~~~~~
Beginning r = 5
Trying to calculate order of  $y - 1$  modulo  $y^4 + y^3 + y^2 + y + 1$ 
-----
Order found!
order = 18480
-----
Trying to calculate order of  $y^4 - 1$  modulo  $y^4 + y^3 + y^2 + y + 1$ 
-----
Order found!
order = 18480
-----
6

```

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dat_gen(47)
We are working in F_47
~~~~~
Beginning r = 2
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 46
-----
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 46
-----
~~~~~
Beginning r = 3
Trying to calculate order of  $y - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 276
-----
Trying to calculate order of  $y^2 - 1$  modulo  $y^2 + y + 1$ 
-----
Order found!
order = 276
-----
~~~~~
Beginning r = 4
Trying to calculate order of  $y - 1$  modulo  $y + 1$ 
-----
Order found!
order = 46
-----
Trying to calculate order of  $y - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 184
-----
Trying to calculate order of  $y^3 - 1$  modulo  $y + 1$ 
-----
Order found!
order = 46

```

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-----
Trying to calculate order of  $y^3 - 1$  modulo  $y^2 + 1$ 
-----
Order found!
order = 184
-----
~~~~~
Beginning r = 5
Trying to calculate order of  $y - 1$  modulo  $y^4 + y^3 + y^2 + y + 1$ 
-----
Order found!
order = 7360
-----
Trying to calculate order of  $y^4 - 1$  modulo  $y^4 + y^3 + y^2 + y + 1$ 
-----
Order found!
order = 7360
-----
6

```

[