SOME COMMANDS IN WOLFRAM ALPHA

Here are problems and the commands that are typed to solve them with Wolfram Alpha.

(1) Reduce 13456 modulo 147:
```
13456 mod 147
```
(2) Find a solution to $14x + 17y = 1$ in $\mathbf{Z}$:
```
solve 14*x + 17*y = 1 in integers
```
(3) Find the gcd of 1457 and 4277:
```
gcd(1457,4277)
```
(4) Compute 14^5 mod 29:
```
14^5 mod 29
```
(5) Find the inverse of 14 mod 29 (that is, solve $14x \equiv 1$ mod 29):
```
14^(-1) mod 29
```
(6) Find the order of 14 mod 29 (that is, find least $k \geq 1$ such that $14^k \equiv 1$ mod 29):
```
order of 14 mod 29
```
(7) Find the solutions to $x^4 \equiv 1$ mod 625:
```
solve x^4 = 1 mod 625
```
(8) Factor 187641 into primes:
```
factor 187641
```
(9) List the primes up to 100:
```
primes <= 100
```
    (You may see a partial list, but pressing the More button gives you the whole list.)
(10) List the primes from 50 to 100:
```
primes from 50 to 100
```
(11) The 1000th prime:
```
1000th prime
```
(12) Find a random integer from 0 to 15647:
```
RandomInteger[15647]
```