

Preliminaries

Division algorithm

If a and b are integers with $b \geq 0$, then **iquo** returns the quotient q and **irem** returns the remainder r such that $a = bq + r$, $0 \leq r < b$. As an example, consider $1432 \div 29$.

```
> iquo(1432,29);
                               49
> irem(1432,29);
                               11
> 29*49+11;
                               1432
```

Modular arithmetic

```
> 53+46 mod 7;
                               1
> 22*87 mod 21;
                               3
> 629-871 mod 13;
                               5
```

Complex arithmetic

```
> (7+6*I) + (23+7*I);
                               30 + 13 I
> (7+6*I) - (23+7*I);
                               -16 - I
> (7+6*I) * (23+7*I);
                               119 + 187 I
> (7+6*I) / (23+7*I);
                                $\frac{203}{578} + \frac{89}{578} I$ 
> (7+6*I) ^ (-1);
                                $\frac{7}{85} - \frac{6}{85} I$ 
```