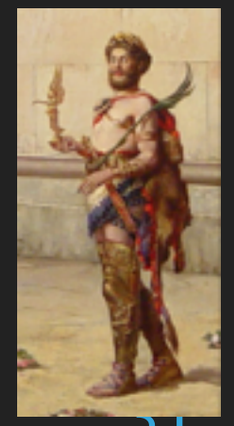
REFORMS



- Introduced in 192 CE by Commodus, son of Marcus Aurelius.
- Renames all months. Most names comes from his regnal name (below).
- The exact order of new month names is not known.
- Also renamed Rome to Colonia Lucia Annia Commodiana.
- The reforms rolled back in 193 CE after assassination in Dec 192 CE as part of "damnatio memoriae".

11	Ianuarius > Lucius	31
12	Februarius > Aelius	28
1	Martius > Aurelius	31
2	Aprilis > Commodus	30
3	Mauis > Augustus	31
4	Iunius > Herculeus	30
5	Julius > Romanus	31
6	Augustus > Exsuperatorius	31
7	September > Amazonius	30
8	October > Invictus	31
9	November > Felix	30
10	December > Pius	31

The Emperor Caesar Lucius Aelius Aurelius Commodus Augustus Pius Felix Sarmaticus Germanicus Maximus Britannicus, Pacifier of the Whole Earth, Invincible, the Roman Hercules, Pontifex Maximus, Holder of the Tribunician Authority for the eighteenth time, Imperator for the eighth time, Consul for the seventh time, Father of his Country, to consuls, praetors, tribunes, 6 and the fortunate Commodian senate, Greeting!

BEST LEAP CYCLE FOR ANCIENT TIMES

- Gregorian calendar spans 100s of years, which was beyond the recording capabilities and planning horizon of ancient people.
- Gregorian calendar has also an accumulating error: 365.2422 (actual) vs 365.2425 (calendar).
  The error of +26 seconds per year translates to 1 day per 3323 years but will occur in ~10000 years due to changes in solar year duration.
- What could be the shortest leap cycle duration within a life expectancy of 30 years with minimal error:
- 20 year cycle: 365*3+366 and skip every 20th leap year: 365 + 1/4 - 1/20 = 365.2000.
  Error is 61 minutes per year.
- 40 year cycle: 365*3+366 and skip every 40th leap year: 365 + 1/4 - 1/40 = 365.2250.
  Error is 25 minutes per year.
- 100 year cycle: 365*3+366 and skip every 100th leap year: 365 + 1/4 - 1/100 = 365.2400.
  Error is 3 minutes per year.
- Only 100 year cycle has better precision than Julian calendar 365.2500.