

Date! □□□□

11

1. 空	1
2. 空	2
2.1. 空	2
2.2. 空	4
3. 空	5
3.1. /date	5
3.2. /year	6
3.3. /month	7
3.4. /day	7
3.5. /time	8
3.6. /hour	8
3.7. /minute	9
3.8. /second	9
3.9. /zone	10
3.10. /timezone	11
3.11. /yearday	11
3.12. /weekday	12
3.13. /week	13
3.14. /isoweek	14
3.15. 空	14
3.16. Pick空	15
4. 空	16
4.1. UNIX空	16
4.2. 空	16
5. 空	17
6. 空	17
7. 空	18
8. 空	19
8.1. Random	19

1.

date!

`date` `time` `date` `time` 24
Red `date` ISO 8601

Note:

- **date!** 1582 1/Jan/-16384 31/Dec/16383 1/Jan/-9999 31/Dec/9999
- 1/Jan/-16384 31/Dec/16383 1/Jan/-9999 31/Dec/9999

2.

date! **make** **to**

2.1.

Rebol ISO

```
<date>/<time>
<date>/<time><zone>
<date>T<time>
<date>T<time>Z
<date>T<time><zone>

<date> 
    <yyyy><sep><mmm><sep><dd>
    <dd><sep><mmm><sep><yyyy>
    <dd><sep><mmm><sep><yy>

T 
    <date> 
    <yyyy><mm><dd>
    <yyyy>-W<ww>
    <yyyy>-W<ww>-<d>
    <yyyy>-<ddd>

<mmm> 
    <m>
    <mon>
    <month>

<time> 
    <hour>:<min>:<sec>
    <hour>:<min>:<sec><zone>
    <hhmmss>
    <hhmmss><zone>
    <hhmmss>.<dec>
    <hhmmss>.<dec><zone>
    <hhmm>
    <hhmm><zone>

<zone> 
    <sign><hour>
```



```
5-October-1999
1999-9-11
11-9-1999
5/sep/2012
5-SEPTEMBER-2012
```

```
02/03/04
02/03/71
```

```
5/9/2012/6:0
5/9/2012/6:00
5/9/2012/6:00+8
5/9/2012/6:0+0430
4/Apr/2000/6:00+8:00
1999-10-2/2:00-4:30
1/1/1990/12:20:25-6
```

```
2017-07-07T08:22:23+00:00
2017-07-07T08:22:23Z
20170707T082223Z
20170707T0822Z
20170707T082223+0530
```

```
2017-W01
2017-W23-5
2017-W23-5T10:50Z
2017-001
2017-153T10:50:00-4:00
```

2.2. 日期时间

```
make date! [<day> <month> <year>]
make date! [<year> <month> <day>]
make date! [<day> <month> <year> <time>]
make date! [<day> <month> <year> <time> <zone>]
make date! [<day> <month> <year> <hour> <minute> <second>]
make date! [<day> <month> <year> <hour> <minute> <second> <zone>]
```

```
<year>    : integer![]
<month>   : integer![]
<day>     : integer![]
<time>    : time![]
<zone>    : integer![]time![]pair![]
<hour>    : integer![]
<minute>  : integer![]
<second>  : integer![]
```

Notes:

- make to
- year day 100 3 1 3 3

```
<date2> : date![]
```

[]

time zone 日付と時刻のフォーマットは **date!** を参照してください

□

```
d: now
== 10-Jul-2017/22:46:22-06:00
d/date
== 10-Jul-2017
```

```
d/date: 15/09/2017
== 15-Sep-2017/22:46:22-06:00
```

3.2. /year

□

```
<date>/year
<date>/year: <year>
```

```
<date> : date![]word[]
<year> : integer![]
```

□

日付と時刻のフォーマットは **date!** を参照してください

□

```
d: now
== 10-Jul-2017/22:46:22-06:00
d/year: 16383
== 16383
d
== 10-Jul-16383/22:46:22-06:00
d/year: 16384
== 16384
d
== 10/Jul/-16384/22:46:22-06:00 ; 16384 年 7 月 10 日
d/year: 32767
== 32767
d
== 10/Jul/-1/22:46:22-06:00
d/year: 32768
== 32768
d
```

```
== 10-Jul-0000/22:46:22-06:00
```

3.3. /month

11

```
<date>/month
<date>/month: <month>

<date>  : date!word
<month> : integer!
```

```
<date>/month
<date>/month: <month>

<date>  : date!word
<month> : integer!
```

00

[illegible]

1

```
d: now
== 10-Jul-2017/22:48:31-06:00
d/month: 12
== 12
d
== 10-Dec-2017/22:48:31-06:00
d/month: 13
== 13
d
== 10-Jan-2018/22:48:31-06:00 ; []
d/month
== 1 ; []
```

3.4. /day

□ □

```
<date>/day
<date>/day: <day>

<date> : date!word
<day>  : integer!
```

```
<date>/day
<date>/day: <day>

<date> : date!word
<day>  : integer!
```

11

[illegible]

1

d: 1-jan-2017

```

== 1-Jan-2017
d/day: 32
== 32
d
== 1-Feb-2017
d/day: 0 ; 0
== 0
d
== 31-Jan-2017

```

3.5. /time

□□

```

<date>/time
<date>/time: <time>

<date> : date!word
<time> : time!none!

```

□□

time! time none!

time none! timezone0

□

```

d: now
== 10-Jul-2017/23:18:54-06:00
d/time: 1:2:3
== 1:02:03
d
== 10-Jul-2017/1:02:03-06:00
d/time: none
== 10-Jul-2017

```

3.6. /hour

□□

```

<date>/hour
<date>/hour: <hour>

<date> : date!word
<hour> : integer!

```


[illegible]

1

```
d: now
== 10-Jul-2017/23:19:40-06:00
d/hour: 0
== 0
d
== 10-Jul-2017/0:19:40-06:00
d/hour: 24
== 24
d
== 11-Jul-2017/0:19:40-06:00
```

3.7. /minute

11

```
<date>/minute
<date>/minute: <minute>

<date>      : date!word
<minute>    : integer!
```

11

[illegible]

1

```
== 10-Jul-2017/23:20:25-06:00
d/minute: 0
== 0
d
== 10-Jul-2017/23:00:25-06:00
d/minute: 60
== 60
d
== 11-Jul-2017/0:00:25-06:00
```

3.8. /second

□ □

```
<date>/second
```

```
<date>/second: <second>
```

```
<date>    : date!word
```

```
<second>  : integer!float!
```

`integer!`

```
d: now
== 10-Jul-2017/23:21:15-06:00
d/second: 0
== 0
d
== 10-Jul-2017/23:21:00-06:00
d/second: -1
== -1
d
== 10-Jul-2017/23:20:59-06:00
d/second: 60
== 60
d
== 10-Jul-2017/23:21:00-06:00
```

3.9. /zone

```
<date>/zone
<date>/zone: <zone>

<date> : date!word
<zone> : time!integer!
```

`zone`

`-16:00` `+15:00` `time!` `/zone`

`zone` `time`

integer! 0

1515

d: 1/3/2017/5:30:0
d/zone: 8

```
== 1-Mar-2017/5:30:00+08:00

d/zone: -4:00
== 1-Mar-2017/5:30:00-04:00
```

```
== 1-Mar-2017/5:30:00+08:00

d/zone: -4:00
== 1-Mar-2017/5:30:00-04:00
```

3.10. /timezone

11

```
<date>/timezone
<date>/timezone: <zone>

<date>      : date!word
<timezone> : integer!time!pair!
```

```
<date>/timezone
<date>/timezone: <zone>

<date>      : date!word
<timezone> : integer!time!pair!
```

11

```

##### -16:00  ## +15:00  ##  time!  ##### /timezone
#####timezone#####zone##time#####

```

```
timezone integer! [0] [0]
```

000000000015000000000000001500000000000000

1

```
d: 1/3/2017/5:30:0
d/timezone: 8
== 1-Mar-2017/13:30:00+08:00

d/timezone: -4:00
== 1-Mar-2017/1:30:00-04:00
```

```
d: 1/3/2017/5:30:0
d/timezone: 8
== 1-Mar-2017/13:30:00+08:00

d/timezone: -4:00
== 1-Mar-2017/1:30:00-04:00
```

Note:

- /timezone 0000000000UTC000000

3.11. /yearday

00

```
<date>/yearday
<date>/yearday: <day>

<date>      : date!word
<yearday>   : integer!
```

```
<date>/yearday
<date>/yearday: <day>

<date>      : date!word
<yearday>   : integer!
```

□ □

[illegible]

Note:

- /yearday /julian Rebol

1

```
d: 1-jan-2017
== 1-Jan-2017
d/yearday
== 1
d: 31-dec-2017
== 31-Dec-2017
d/yearday
== 365
d: 31-dec-2020
== 31-Dec-2020
d/yearday
== 366 ; 0000
d: 31-dec-2017
== 31-Dec-2017
d/yearday: 366
== 366
d
== 1-Jan-2018
```

3.12. /weekday

00

```
<date>/weekday
<date>/weekday: <day>

<date>      : date!word
<weekday>   : integer!
```

00

[illegible]

1

```
d: now
== 10-Jul-2017/23:25:35-06:00
d/weekday
== 1
d/weekday: 2
```

```
== 2
d
== 11-Jul-2017/23:25:35-06:00
d/weekday: 7
== 7
d
== 16-Jul-2017/23:25:35-06:00
d/weekday: 8
== 8
d
== 17-Jul-2017/23:25:35-06:00
```

3.13. /week

11

```
<date>/week
<date>/week: <day>

<date> : date!word
<week> : integer!
```

```
<date> : date!word
<week> : integer!
```

11

[illegible]

Note:

- [illegible]

1

```
d: now
== 10-Jul-2017/23:28:07-06:00
d/week
== 28
d/week: 29
== 29
d
== 16-Jul-2017/23:28:07-06:00
d/week: 52
== 52
d
== 24-Dec-2017/23:28:07-06:00
d/week: 53
== 53
d
== 31-Dec-2017/23:28:07-06:00
```

```
d/week: 54
== 54
d
== 7-Jan-2018/23:28:07-06:00
```

3.14. /isoweek

11

```
<date>/isoweek
<date>/isoweek: <day>

<date>      : date!word
<isoweek>  : integer!
```

11

ISO

8601

[illegible]

1

```
d: now
== 10-Jul-2017/23:29:13-06:00
d/isoweek
== 28
d/isoweek: 29
== 29
d
== 17-Jul-2017/23:29:13-06:00
d/isoweek: 52
== 52
d
== 25-Dec-2017/23:29:13-06:00
d/isoweek: 53
== 53
d
== 1-Jan-2018/23:29:13-06:00
```

3.15. □□□□□□□□

word

```
<date>/<index>
```

```
<date> : date!word
```

<index> : integer!

integer!は、整数を表す。indexは、整数の範囲を指定する。

index	field
1	date
2	year
3	month
4	day
5	zone
6	time
7	hour
8	minute
9	second
10	weekday
11	yearday
12	timezone
13	week
14	isoweek

3.16. Pick

Pickは、指定したフィールドから値を選択する。pickは、フィールドのリストを指定する。

例

```
pick <date> <field>
```

```
<date> : date!
```

```
<field> : integer!
```

integerは、整数を表す。indexは、整数の範囲を指定する。

例

```
d: now
== 10-Jul-2017/23:35:01-06:00
names: system/catalog/accessors/date!
repeat i 14 [print [pad i 4 pad names/:i 10 pick d i]]
1  date      11-Jul-2017
2  year      2017
3  month      7
```

4	day	11
5	zone	8:00:00
6	time	21:43:52
7	hour	21
8	minute	43
9	second	52.0
10	weekday	2
11	yearday	192
12	timezone	8:00:00
13	week	28
14	isoweek	28

4. 日付と時刻

4.1. UNIX時刻

UNIX時刻は、1970年1月1日（GMT）00:00:00 から経過した秒数を表す。

例

```
to-integer <date>
to-date <epoch>

<date> : date!
<epoch> : UNIX時刻integer!
```

UNIX時刻は、UTC（協調世界時）から算出される。UNIX時刻は、1970年1月1日（GMT）00:00:00 から経過した秒数を表す。

```
d: 8-Jul-2017/17:49:27+08:00
to-integer d
== 1499507367

to-integer 8-Jul-2017/9:49:27
== 1499507367

to-date to-integer d
== 8-Jul-2017/9:49:27
```

UNIX時刻は、2038年1月19日03:14:07（GMT）まで有効である。

4.2. 日付と時刻のフォーマット

例

```
to date! <spec>
```


<spec> :

make 2.2 date!
 make

5.

=, ==, <>, >, <, >=, <=, same? min max sort

```
3-Jul-2017/9:41:40+2:00 = 3-Jul-2017/5:41:40-2:00
== true
```

```
10/10/2017 < 1/1/2017
== false
```

```
max 10/10/2017 1/1/2017
== 10-Oct-2017
```

```
same? 1/1/1980 1-JAN-1980
== true
```

```
sort [1/1/2017 5/10/1999 3-Jul-2017/5:41:40-2:00 1/1/1950 1/1/1980/2:2:2]
== [1-Jan-1950 1-Jan-1980/2:02:02 5-Oct-1999 1-Jan-2017 3-Jul-2017/5:41:40-02:00]
```

6.

-
-
- time date
- 2
- 2 difference time!

```
20-Feb-1980 + 50
== 10-Apr-1980
```

```
20-Feb-1980 + 3
== 23-Feb-1980
```

```
20-Feb-1980 - 25
== 26-Jan-1980
```

```

20-Feb-1980 + 100
== 30-May-1980

28-Feb-1980 + 20:30:45
== 28-Feb-1980/20:30:45

28-Feb-1980/8:30:00 + 20:30:45
== 29-Feb-1980/5:00:45

d: 20-Feb-1980
d/day: d/day + 50
== 10-Apr-1980

d: 20-Feb-1980
d/month: d/month + 5
== 20-Jul-1980

d: 28-Feb-1980/8:30:00
d/hour: d/hour + 48
== 1-Mar-1980/8:30:00

08/07/2017/10:45:00 - 20-Feb-1980/05:30:0
== 13653

difference 08/07/2017/10:45:00 20-Feb-1980/05:30:0
327677:15:00

```

7. 時間操作

`now` は、現在の時刻を返す。OS によって、時刻の精度が異なる。また、OS によって、時刻の表現方法が異なる。

- `/utc` UTC 時刻を返す。
- `/precise` Windows 60 1 Unix 時刻を返す。

□

```

now
== 8-Jul-2017/18:32:25+08:00

now/year
== 2017

now/hour
== 18

now/month
== 7

```

```
now/day
== 8

now/hour
== 18

now/zone
== 8:00:00

now/utc
== 8-Jul-2017/10:32:25
```

8. □□□□□□□□□□□□□□

8.1. Random

□□

```
random <date>

<date> : date!□
```

□□

□□□□□□□□□□□□□□□□□□□□□□□□time□timezone□□□□□□□□□□□□□□□□□□□□time□timezone□□□□□□□□

□

```
random 09/07/2017
== 18-May-1972

random 09/07/2017
== 13-Aug-0981

random 09/07/2017/12:00:00+8
== 28-Feb-0341/17:57:12+04:00

random 09/07/2017/12:00:00+8
== 13-Dec-1062/5:09:12-00:30
```