Return Type and Value: number – The year in the Gregorian calendar [ISO 8601 §3.2.1] for the date and/or time having the given *date-value*. The range of return values is determined by the date base currently in use (§18.17.4).

However, if *date-value* is out of range for the current date base value, `#NUM!` is returned.

[*Example*:

`YEAR(DATE(2006,1,2))` results in `2006`
`YEAR(DATE(2006,0,2))` results in `2005`
`YEAR("2006/1/2 10:45 AM")` results in `2006`
`YEAR(30000)` results in `1982` for the 1900 date base system, or `1986` for the 1904 date base system

end example]

18.17.7.352 YEARFRAC

Syntax:

YEARFRAC (*start-date* , *end-date* [, *basis*])

Description: Computes the fractional number of years represented by the number of whole days between two dates, *start-date* and *end-date*., according to *basis*.

Arguments:

Name	Type	Description
start-date	number	The period's starting date. *start-date* can be earlier than, the same as, or later than *end-date*.
end-date	number	The period's ending date.
basis	number	The truncated integer type of day count basis to use, as follows:

Value	Day Count Basis
`0` or omitted	US (NASD) 30/360. Assumes that each month has 30 days and the total number of days in the year is 360 by making the following adjustments: • If the date is 28 or 29 February, it is adjusted to 30 February. • For months

Name	Type	Description
		with 31 days, if the first date has a day value of 31, the date is converted to day 30. If the second date has a day value of 31, it is changed to 30 days as long as the first date was not 28 or 29 February, in which case it does not change.
		1 — Actual/actual. The actual number of days between the two dates are counted. If the date range includes the date 29 February, the year is 366 days; otherwise it is 365 days.
		2 — Actual/360. Similar to Basis 1, but only has 360 days per year.
		3 — Actual/365. Similar to Basis 1, but always has 365 days per year.
		4 — European 30/360. The European method for adjusting day counts. Assumes that each month has 30 days and the total number of days in the year is 360 by making the following adjustments: • If the date is 28 or 29 February, it

Name	Type	Description
		is adjusted to 30 February. • For months with 31 days, all dates with a day value of 31 are changed to day 30, including situations where the first date is 28 or 29 Februar y.

All arguments are truncated to integers.

Return Type and Value: number – The fractional number of years represented by the number of whole days between two dates, *start-date* and *end-date*., according to *basis*. If the Actual/actual basis is used, the year length used is the average length of the years that the range crosses, regardless of where *start-date* and *end-date* fall in their respective years.

However, if the value of *basis* is out of range, `#NUM!` is returned.

[*Example*:

`YEARFRAC(DATE(2006,1,1),DATE(2006,3,26))` results in `0.236111111`
`YEARFRAC(DATE(2006,3,26),DATE(2006,1,1))` results in `0.236111111`
`YEARFRAC(DATE(2006,1,1),DATE(2006,7,1))` results in `0.5`
`YEARFRAC(DATE(2006,1,1),DATE(2007,9,1))` results in `1.666666667`
`YEARFRAC(DATE(2006,1,1),DATE(2006,7,1),0)` results in `0.5`
`YEARFRAC(DATE(2006,1,1),DATE(2006,7,1),1)` results in `0.495890411`
`YEARFRAC(DATE(2006,1,1),DATE(2006,7,1),2)` results in `0.502777778`
`YEARFRAC(DATE(2006,1,1),DATE(2006,7,1),3)` results in `0.495890411`
`YEARFRAC(DATE(2006,1,1),DATE(2006,7,1),4)` results in `0.5`
`YEARFRAC(DATE(2004,3,1),DATE(2006,3,1),1)` results in 1.998175 (because 2004 is a leap year and Actual/actual basis is used, the average year length is 365.3333)

end example]

18.17.7.353 YIELD

Syntax:

`YIELD ( settlement , maturity , rate , pr , redemption , frequency [ , [ basis ] ] )`

Description: Computes the yield on a security that pays periodic interest.

Mathematical Formula:

If there is one coupon period or less until redemption, `YIELD` is calculated as follows:

$$YIELD = \frac{\left(\frac{redempion}{100} + \frac{rate}{frequency}\right) - \left(\frac{par}{100} + \left(\frac{A}{E} \times \frac{rate}{frequency}\right)\right)}{\frac{par}{100} + \left(\frac{A}{E} \times \frac{rate}{frequency}\right)} \times \frac{frequency \times E}{DSR}$$

where:

- A = number of days from the beginning of the coupon period to the settlement date (accrued days).
- DSR = number of days from the settlement date to the redemption date.
- E = number of days in the coupon period.
- *frequency* = argument *frequency*
- *par* = argument *pr*
- *rate* = argument *rate*
- *redemption* = argument *redemption*

If there is more than one coupon period until redemption, `YIELD` is calculated through some number of iterations. The resolution uses the Newton method, based on the formula used for the function `PRICE`. The yield is changed until the estimated price given the yield is close to price.

Arguments:

Name	Type	Description
settlement	number	The security's settlement date.
maturity	number	The security's maturity date.
rate	number	The security's interest rate.
pr	number	The security's price.
redemption	number	The security's redemption value per $100 face value.
frequency	number	the number of coupon payments per year. (For annual payments, *frequency* is 1; for semiannual payments, *frequency* is 2; for quarterly payments, *frequency* is 4.) *frequency* is truncated to an integer.