

Integer and Real Functions

Func	Description	Argument(s)	Return	Example
abs	Absolute value of any number	real/integer	← Same as	If Y = -9.2 and X := abs(Y) ; then X = 9.2
round	Rounds real based on 0.5 rule	real	integer	If Y = -9.2 and X := round(Y) ; then X = -9
trunc	Rounds real down to lower integer. Add 1 to round up to higher integer.	real	integer	If Y = -9.2 and X := trunc(Y) ; then X = -10 If Y = 4.8 and X := trunc(Y) + 1 ; then X = 5
sqrt	Square root	real/integer	real	If Y = 9.0 and X := sqrt(Y) ; then X = 3.0
sqr	Square	real/integer	← Same as	If Y = -9.0 and X := sqr(Y) ; then X = 81.0
int	Returns the portion of real to left of point	real	real	If Y = -9.2 and X := int(Y) ; then X = -9.0
frac	Returns the portion of a real to the right of a point.	real	real	If Y = -9.2 and X := frac(Y) ; then X = -0.2
str	Turns an integer into a string. Stands alone.	(integer, string)	String in the argument	If Y = 10 and str(Y, S) ; then S = '10'
val	Turns a string into an integer. Stands alone.	(string, integer)	Integer in the argument	If S = '24' and val(S, Y) ; then Y = 24
randomize	Activates random number functions. Place on first line of main program. Stands alone.			
random	Generates a random integer within range.	integer	integer	If X := random(9) ; then X is a random integer from zero to eight. If X := random(9) + 1 ; then X is a random integer from one to nine.

integer types			
Type	Range	Bytes	
Byte	0 .. 255	1	
Shortint	-128 .. 127	1	
Smallint	-32768 .. 32767	2	
Word	0 .. 65535	2	
Integer	smallint or longint	2 or 4	
Cardinal	longword	4	
Longint	-2147483648 .. 2147483647	4	
Longword	0..4294967295	4	
Int64	-9223372036854775808 .. 9223372036854775807	8	
QWord	0 .. 18446744073709551615	8	

real types			
Type	Range	Significant digits	Bytes
Real	platform dependent	???	4 or 8
Single	1.5E-45 .. 3.4E38	7-8	4
Double	5.0E-324 .. 1.7E308	15-16	8
Extended	1.9E-4932 .. 1.1E4932	19-20	10
Comp	-2E64+1 .. 2E63-1	19-20	8
Currency	-922337203685477.5808 .. 922337203685477.5807	8	

0		24	↑	48	0	72	H	96	`	120	x	144	É	168	¿	192	L	216	†	240	≡
1	@	25	↓	49	1	73	I	97	a	121	y	145	æ	169	ƒ	193	±	217	‡	241	±
2	0	26	→	50	2	74	J	98	b	122	z	146	Æ	170	ſ	194	218	242	≥		
3	♥	27	←	51	3	75	K	99	c	123	{	147	ø	171	½	195	219	243	≤		
4	♦	28	↖	52	4	76	L	100	d	124	|	148	ö	172	¾	196	220	244	∫		
5	+	29	→	53	5	77	M	101	e	125	}	149	ð	173	ı	197	221	245	∫		
6	+	30	↗	54	6	78	N	102	f	126	~	150	û	174	«	198	222	246	÷		
7		31	↘	55	7	79	O	103	g	127	Δ	151	ü	175	»	199	223	247	∞		
8		32		56	8	80	P	104	h	128	Ç	152	ÿ	176	000	200	224	α	248		
9		33	!	57	9	81	Q	105	i	129	ü	153	0	177	001	201	225	Β	249	.	
10		34	''	58	:	82	R	106	j	130	é	154	Û	178	002	202	226	Γ	250	√	
11	♂	35	#	59	;	83	S	107	k	131	à	155	ç	179	003	203	227	Π	251	√	
12	♀	36	\$	60	<	84	T	108	l	132	ä	156	£	180	004	204	228	Σ	252	∞	
13		37	%	61	=	85	U	109	m	133	å	157	¥	181	005	205	229	σ	253		
14	¶	38	&	62	>	86	U	110	n	134	å	158	¥	182	006	206	230	μ	254	■	
15	✕	39	'	63	?	87	W	111	o	135	ç	159	ƒ	183	007	207	231	Υ	255	a	
16	▶	40	(	64	@	88	X	112	p	136	è	160	á	184	008	208	232	θ		
17	◀	41	)	65	A	89	Y	113	q	137	ë	161	í	185	009	209	233	ø		
18	↑	42	*	66	B	90	Z	114	r	138	è	162	ó	186	010	210	234	Ω			
19	!!	43	+	67	C	91	[	115	s	139	ı	163	ü	187	011	211	235	0		
20	¶	44	,	68	D	92	\	116	t	140	ı	164	ñ	188	012	212	236	∞			
21	§	45	-	69	E	93	]	117	u	141	ì	165	Ñ	189	013	213	237	∅		
22	■	46	.	70	F	94	^	118	v	142	â	166	ä	190	014	214	238	€			
23	↑	47	/	71	G	95	_	119	w	143	ã	167	å	191	015	215	239	∅			

String Functions

Func	Description	Argument(s)	Return	Example
lowercase	Turns all alphabetic characters in a string to lowercase.	string	string	If S = 'HaPpy' and T := lowercase(S) ; then T = 'happy'
upcase	Turns all alphabetic characters in a string to uppercase.	string	string	If S = 'HaPpy' and T := upcase(S) ; then T = 'HAPPY'.
str	Turns an integer into a string. Stands alone.	(integer, string)	string in the argument	If Y = 10 and str(Y, S) ; then S = '10'
val	Turns a string into an integer. Stands alone.	(string, integer)	integer in the argument	If S = '24' and val(S, Y) ; then Y = 24
length	Returns the number of characters in a string.	string	integer	If S = 'HaPpy' and X := length(S) ; then S = 5.
copy	Copies a portion of a string	string, start position, number of characters to copy	string	If S = 'HaPpy' and T := copy(S, 3, 2) ; then T = 'Pp'
delete	Deletes a portion of a string. Stands alone.	string, start position, number of characters to delete	string from the argument.	If S = 'HaPpy' and delete(S, 3, 2) ; then S = 'Hay'
insert	Inserts one string into another. Stands alone.	providing string, receiving string, position to insert	receiving string from the argument	If S = 'HaPpy' and T = 'DaYs' and insert(T, S, 3) ; then S = 'HaDaYsPpy'
concat	Appends several string onto another in order.	Comma separated strings (as few as two)	string	If S = 'HaPpy' and T = 'DaYs' and U := concat(S, ' ', T) ; then U = 'HaPpy DaYs'

char functions

Func	Description	Argument(s)	Return	Example
chr	Returns the ASCII character for an ordinal.	integer	char	If X = 64 and R := chr(X) ;; then R = '@'
ord	Returns an ordinal for an ASCII character.	chr	integer	If R = '@' and X := ord(R) ;; then X = 64
pred	Returns the prior ASCII character in serial order.	chr	chr	If R = '@' and S := pred(R) ;; then S = '?'
succ	Returns the next ASCII character in serial order.	chr	chr	If R = '@' and S := succ(R) ;; then S = 'A'