Pure Data 0.4 quick reference guide		declare	set search path and/or load libraries	lop~	one-pole low pass filter
	•	delay	callback after time delay	makefilename	e create a filename
adc~	analog to digital converter (sound card input)	delread~	read a signal from a delay line	makenote	send note-on messages and schedule note-off
append	add item to a list	delwrite~	writes a signal in a delay line		for later
bag	collection of numbers	drawcurve	draw shapes for data structures	metro	metronome object
bang	triggers an action by sending a BANG	drawnumber	draw numeric fields from data structures	midiin	MIDI raw message in
	message	drawpolygon	draw shapes for data structures	midiout	MIDI raw message out
bang~	triggers an action by sending a BANG after	element	get pointer to an element of an array	moses	part a stream of numbers
G	each DSP cycle	env~	envelope follower	mtof, mtof~	MIDI to frequency
bendin	MIDI pitch bend in	f	abbreviation of float	my_canvas	GUI 2D controller
bendout	MIDI pitch bend out	fft~	forward complex FFT	namecanvas	attach this canvas to a name (obsolete)
biquad~	2-pole-2-zero-filter	filledcurve	draw shapes for data structures and fill them	netreceive	listen for incoming messages from network
block~	block size and on/off control for DSP	filledpolygon	draw shapes for data structures and fill them	netsend	send Pd messages over a network
bng	GUI bang	float	store and recall a floating point number	noise~	uniformly distributed white noise
bp~	bandpass filter	framp~	estimate frequency and amplitude of FFT	notein	MIDI note in
catch~	summing signal bus and non-local connection		components	noteout	MIDI note out
change	eliminate redundancy in a number stream	ftom, ftom~	frequency to MIDI	openpanel	query you for a filename
clip	restrict a message to lie between two limits	get	get values from a scalar	osc~	cosine wave oscillator
clip~	restrict a signal to lie between two limits	getsize	get number of elements of an array	outlet	add an outlet to a pd
cos~	cosine waveshaper	hip~	one-pole high pass filter	pack	combine several atoms into one message
cpole~	complex one-pole (recursive) filter, raw	hslider	GUI value selector	pd	create subpatch
cputime	measure CPU usage	ifft~	inverse complex FFT	pgmin	MIDI program change in
ctlin	MIDI control in	inlet	add an inlet to a pd	pgmout	MIDI program change out
ctlout	MIDI control out	int	store and recall an integer	phasor~	sawtooth generator
czero~	complex one-zero (non-recursive) "reverse"	key	get raw key value (on key pressed)	pipe	message "delay line"
	filter, raw	keyup	get raw key value (on key released)	plot	draw array elements of scalars
czero_rev~	complex one-zero (non-recursive) "reverse"	keyname	get key value and state	pointer	remember the location of a scalar in a list
	filter, raw	line	ramp generator (target value, speed)	poly	MIDI style polyphonic voice allocator
dac~	digital to analog converter (sound card output)	line~	audio ramp generator	polytouchin	MIDI poly aftertouch in
dbtopow	decibel to power	list	building and using variable-length messages	polytouchout	MIDI poly aftertouch out
		loadbang	triggers an action by sending a BANG	powtodb	power to deciBel
	deciBel to RMS		message	print	print messages to terminal window

6/8 rsqrt-         8 bit reciprocal square root         soundfiler         read and write soundfiles to arrays         time         measure logical time           6/8 str4-         8 bit squar root         spiget         puso or block messages         CPU (agle)         GUI (agle)           clist         ext- based sequencer         stripote         send note- on messages and schedule not-off         trigger         secure messages in right-to-left order.           reads/-         read a soundfile         struct         declare the fields in a data structure         to suppose the suppose the suppose the suppose to the suppose the suppos	print~	print out raw values of a signal	snapshot~	convert a signal to a number on demand	throw~	summing signal bus and non-local connection
QS sqrt- qist         8 bit squar roof         spigot text-based sequencer         spigot signal square roof         text-based sequencer         control         signal square roof         trigger         collection contensages and schedule not-off         trigger         column column integers         send not-on messages and schedule not-off         tread soundile         send not-on messages and schedule not-off         tread soundile         struct         declare the fields in a data structure         tread soundile         struct of celare the fields in a data structure         tread soundile         struct of celare the fields in a data structure         tread soundile         support of celare the message to atoms           receiver         next or enciver messages without patch chords         swap         swap or order         value         nonlocal shared value (named variable)           receiver         signal receive; one-to-many non-local signal         witch         blocks size and on/off control for DSP and         value         nonlocal shared value (named variable)           riffl-         forward real FFT         switch         switches it off         vef-         vef-         vef-         velage-controlled bandpass sfilter           riffl-         forward real FFT         symbol         store and recall a symbol         vef-         vef-         vef-         vef-         vef-         vef-         vef-         vef-	-		-	_		
dist         text-based sequencer         sqrt-         signal square root         trigger         sequence messages in right-to-left order.           random         pseudorandom integers         for later         for later         for later         sean include on message and schedule not-off         sean include on message and schedule not-off         seas green present as be abbreviated:           readsf-         read a soundfile         struct         declare the fields in a data structure         symbol         spent off           receive         receive message without patch chords         swap         swap two numbers, respecting right-to-left         until         loop           receive         enceives message without patch chords         swap         swap two numbers, respecting right-to-left         until         loop           receive         signal receive; one-to-many non-local signal         switches it off         vef         witches it off           fresh         forward real FFT         switches it off         vef         vef-         vilvage-controlled bandpass filter           rifft-         first         first         first         wilvage-controlled bandpass filter           rimiter         first         gene cole         struct         special recipion of trigger         vilvage-         vilvage- resided bandpass filter <th< th=""><th></th><th>-</th><th></th><th>•</th><th></th><th>_</th></th<>		-		•		_
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	sig~	convert numbers to audio signal	threshold~	trigger from audio signal		