

A cheat sheet for Small Worlds, by Duncan J Watts

The most common uses for the most common symbols.

symbol	lingo	meaning	equation
G		a graph	
$V(G)$		the set of vertices	
$E(G)$		the set of edges	
n	order	number of vertices	$ V(G) $
M	size	number of edges	$ E(G) $
$\Gamma(v)$	neighbourhood	set of vertices adjacent to v , excluding v .	
k_v	degree of k	number of vertices connected to k	$ V(\Gamma(v)) $
k	degree	the mean of k_v for the graph	$\sum_v k_v/n$
$d(i, j)$		the edge-count of the shortest path between vertices i and j	
$L(G)$	characteristic path length	median of the means of shortest path lengths.	$\bar{d}_v \equiv \sum d(v, j)/k_v$; then $L(G) = \text{median of } \bar{d}_v$.
γ_v		edges in $\Gamma(v)$ over possible number of edges	$\frac{ E(\Gamma(v)) }{\binom{k_v}{2}}$
γ	clustering coefficient	mean γ_v over all v	$\sum \gamma_v/n$
$R(i, j)$	range	If edge (i, j) were missing, what would $d(i, j)$ be? If $R(i, j) > 2$, then edge is a <i>shortcut</i> .	
ϕ		The % of edges which are shortcuts	
ψ		% of pairs of vertices which are not connected but share one and only one neighbour	
$S(v)$	significance	$L(\Gamma(v))$ if v were deleted	
$S(G)$	average significance	the mean of $S(v)$	$\sum_v S(v)/n$
ξ		a parameter indicating the scale over which connections can be made. Low $\xi \Rightarrow$ only physically local connections.	
α		Parameter for add-to-substrate graphs; see p. 46.	
β		parameter for rewire-the-substrate graphs; see p. 67.	