

## allthemath.org Vol II Episode II – R cheat sheet

<code>#</code>	Mark a line as a comment (ignored by R)
<code>variable &lt;- ...</code>	Set a variable to a value
<code>+, -, *, /</code>	Add, subtract, multiply, divide
<code>^</code>	Exponentiation (powers)
<code>sqrt(variable)</code>	Square root
<code>print(...)</code>	Print a variable to the screen
<code>cat("text", x, "\n")</code>	Combine text and variable ( <b>x</b> )
<code>c(3,4,2)</code>	Create a vector with elements 3, 4, 2
<code>rep(0,6)</code>	Create an all-zero vector with 6 elements
<code>3:9</code>	Create a vector with elements 3, 4, ..., 9
<code>seq(5,45,5)</code>	Create a vector with elements 5, 10, 15, ..., 45
<code>runif(4)</code>	Create a vector with 4 random numbers between 0 and 1
<code>round(variable)</code>	Round a non-integer to the nearest integer
<code>trunc(variable)</code>	Truncate non-integer part of a number
<code>length(x)</code>	Get the length (number of elements) of the vector <b>x</b>
<code>x[2]</code>	Get element 2 of the vector <b>x</b>
<code>x[3:7]</code>	Get elements 3 through 7 of the vector <b>x</b>
<code>x %*% y</code>	Compute the dot product of <b>x</b> and <b>y</b>
<code>sum(x != 0)</code>	Compute the $\ell^0$ norm of <b>x</b>
<code>norm(matrix(x), type="1")</code>	Compute the $\ell^1$ norm of <b>x</b>
<code>norm(matrix(x), type="2")</code>	Compute the Euclidean norm of <b>x</b>
<code>norm(matrix(x), type="I")</code>	Compute the $\ell^\infty$ norm of <b>x</b>
<code>sum(x)</code>	Add up the elements of <b>x</b>
<code>min(x), max(x)</code>	Find the minimum (or maximum) element of <b>x</b>
<code>which.min(x), which.max(x)</code>	Find the <i>index</i> of the minimum (or maximum) element of <b>x</b>
<code>scan("filename")</code>	Read data from a text file into a vector