

# Function Combinators with Ramda

Original Idea comes from [Avaq/combinators.js](https://github.com/avaq/combinators.js).

Name	#	Haskell	Ramda	Crocks	Functional Signature	Functor $m \Rightarrow$	Function $f, g, h$ Evaluation
identity	<b>I</b>	<code>id</code>	<code>identity</code>	<code>identity</code>	<code>a → a</code>		
constant	<b>K</b>	<code>const</code>	<code>always</code>	<code>constant</code>	<code>a → b → a</code>		
eager application <sup>1</sup>	<b>A</b>	<code>(\$)</code>	<code>call</code>		<code>(( ) → b) → b</code>		
lazy application			<code>thunkify</code> , <code>partial</code>		<code>(a → b) → a → (( ) → b)</code>		
thrush	<b>T</b>	<code>(&amp;)</code>	<code>applyTo</code>	<code>applyTo</code>	<code>a → (a → b) → b</code>		
tap			<code>tap</code>	<code>tap</code>	<code>(a → b) → a → a</code>		
flip	<b>C</b>	<code>flip</code>	<code>flip</code>	<code>flip</code>	<code>(a → b → c) → b → a → c</code>		<code>f(b, a)</code>
compose	<b>B</b>	<code>(.)</code> , <code>fmap</code> <sup>2</sup>	<code>map</code> <sup>2</sup> , <code>o</code>	<code>composeB</code>	<code>(b → c) → (a → b) → a → c</code>	<code>(b → c) → m b → m c</code>	<code>f(g(a))</code>
substitution	<b>S</b>	<code>ap</code> <sup>2</sup>	<code>ap</code> <sup>2</sup>	<code>substitution</code>	<code>(a → b → c) → (a → b) → a → c</code>	<code>m (b → c) → m b → m c</code>	<code>f(a, g(a))</code>
chain			<code>chain</code> <sup>2</sup>		<code>(a → b → c) → (b → a) → b → c</code>	<code>(a → m c) → m a → m c</code>	<code>f(g(b), b)</code>
duplication	<b>W</b>	<code>join</code> <sup>2</sup>	<code>unnest</code> <sup>2</sup>		<code>(a → a → b) → a → b</code>	<code>m (m b) → m b</code>	<code>f(a, a)</code>
lift			<code>converge</code> , <code>lift</code>	<code>converge</code>	<code>(b → c → d) → (a → b) → (a → c) → a → d</code>	<code>(b → c → d) → m b → m c → m d</code>	<code>f(g(a), h(a))</code>
useWith			<code>useWith</code>	<code>compose2</code>	<code>(c → d → e) → (a → c) → (b → d) → a → b → e</code>		<code>f(g(a), h(b))</code>
psi	<b>P</b>	<code>on</code>	<code>on</code>	<code>psi</code>	<code>(b → b → c) → (a → b) → a → a → c</code>		<code>f(g(a1), g(a2))</code>
"compose inner"			<code>map</code> <sup>3</sup>		<code>(a → d → c) → (b → d) → (a → b → c)</code>	<code>Functor n ⇒ m (d → c) → n d → m n c</code>	<code>f(a, g(b))</code>
"lift partial"			<code>map</code> <sup>4</sup>		<code>(d → b → c) → (a → d) → (a → b → c)</code>	<code>Functor n ⇒ (d → n c) → m d → m n c</code>	<code>f(g(a), b)</code>
unit				<code>unit</code>	<code>() → undefined</code>		

<sup>1</sup> The A-combinator can be implemented as an alias of the I-combinator. Its implementation in Haskell exists because the infix nature gives it some utility. Its implementation in Ramda exists because it is overloaded with additional functionality.

<sup>2</sup> Algebras like `ap` have different implementations for different types. They work like Function combinators only for Function inputs.

<sup>3</sup> `(mfd2c, nd) => map( fd2c => map(fd2c)(nd) )( mfd2c )`

<sup>4</sup> `(fd2nc, md) => map(fd2nc, md)`