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mock-up of scientific calculator

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This mock-up of a scientific calculator is realistic in that it has almost every function one can expect on a typical scientific calculator. It is unrealistic in that each function gets its own key. Usually, scientific calculators have some kind of shift key (labeled “Shift”, “2nd” or something similar) and almost all the other buttons (including the digit buttons) have a second or even third use. Sometimes these shifts make sense (sine and arcsine on the same key, for example), sometimes less so (for example, the random number generator on the key for  $\pi$  or the decimal point).

BIN	EE		OFF	ON
OCT	$\frac{d}{c}$	RAND		C
DEC	$a\frac{b}{c}$	$\Sigma+$	$\Sigma-$	$y\sigma n - 1$
HEX	nCr	$\hat{x}$	$\hat{y}$	$y\sigma n$
x!	nPr	$\bar{x}$	$\bar{y}$	$x\sigma n - 1$
$e^x$	$\pi$	$P \rightarrow R$	$R \rightarrow P$	$x\sigma n$
ln	DEG	GRAD	RAD	MR
$10^x$	$\sin^{-1}$	$\cos^{-1}$	$\tan^{-1}$	M+
log	sin	cos	tan	STO
$\sqrt[y]{x}$	D	E	F	%
$x^y$	A	B	C	$\div$
$\sqrt[3]{x}$	7	8	9	$\times$
$x^3$	4	5	6	$-$
$\sqrt{x}$	1	2	3	$+$
$x^2$	0	.	$\pm$	$=$
$\frac{1}{x}$				

Not all scientific calculators support binary, octal and hexadecimal display. Fractions display and conversion is another category of functions that is available on many, but not all, scientific calculators. The trigonometric and statistical functions, on the other hand, are always standard, even if the button labels aren’t always (mainly for the statistical functions). The percentage key is more of a rarity on scientific calculators, something reflected by the Windows Calculator, which has percentage in Standard mode but not Scientific (puzzlingly, this is also true of the square root key).

Square root and cubic root are usually “postfix” operations, e.g., meaning that to compute  $\sqrt{2209}$  one would enter  $[2][2][0][9][\sqrt{x}]$ . On the CVS-brand scientific calculator with 2-line display, however, that would result in a “syntax error”; the square root key has to be pushed before the digits of the operand.