

# Don't Drink and Derive

Jason Geffner

Difficulty: Easy

ARITHMETIC	[11.0901699437494742]
RADIUS	[9.86960440108935862]
MULTIPLICATION	[54.5981500331442391]
ABACUS	[961.389193575304437]
TRIGONOMETRY	[148.413159102576603]
INFINITY	[4.23606797749978970]
DIFFERENTIAL	[97.4090910340024372]
N!	[2.61803398874989485]

1. Realize that “9.86960440108935862” is  $\pi^2$ . This can be realized by noticing that all words are math-related and thinking in this context, and/or by thinking of the formula for RADIUS (which includes  $\pi$ ), and/or by searching the web for a substring of “9.86960440108935862”, etc.
2. Determine values for  $\pi^3$ ,  $\pi^4$ ,  $\pi^5$ , etc.
3. Realize that “961.389193575304437” is  $\pi^6$  and “97.4090910340024372” is  $\pi^4$ .
4. Determine that other mathematical constants must be used for the other numbers.
5. Determine that the other numbers are powers of  $\varphi$  (the Golden Ratio) and  $e$  (the Base of the Natural Logarithm).
6. Use the values of the powers as indexes into the corresponding words:

ARITHMETIC	[11.0901699437494742]	→	ARITHMETIC[5]	=	<b>H</b>
RADIUS	[9.86960440108935862]	→	RADIUS[2]	=	<b>A</b>
MULTIPLICATION	[54.5981500331442391]	→	MULTIPLICATION[4]	=	<b>T</b>
ABACUS	[961.389193575304437]	→	ABACUS[6]	=	<b>S</b>
TRIGONOMETRY	[148.413159102576603]	→	TRIGONOMETRY[5]	=	<b>O</b>
INFINITY	[4.23606797749978970]	→	INFINITY[3]	=	<b>F</b>
DIFFERENTIAL	[97.4090910340024372]	→	DIFFERENTIAL[4]	=	<b>F</b>
N!	[2.61803398874989485]	→	N![2]	=	<b>!</b>

The answer is Hats Off!

Hints:

1. ***Pi*** is very *powerful*.
2. The numbers are powers of mathematical constants.