Our system	Wolfram Alpha	Performance
1. What is the formula for Riemann zeta function?		
$\zeta(s) \sum_{n=1}^{\infty} \frac{1}{n^s}$	$\zeta(s) = 2^s \pi^{(-1+s)} \Gamma(1-s) \sin((\pi s)/2) \zeta(1-s)$	$=$
2. What is the formula for Logical equivalence?		
$p \iff q$	No result	$>$
3. What is the formula for Direct sum?		
$(a_1, b_1) \cdot (a_2, b_2) = (a_1 \circ a_2, b_1 \bullet b_2)$	$\sum_{k=0}^{\infty} x^k = 1/(1-x)$ when $abs(x) < 1$	$>$
4. What is the formula for Determinant?		
$\det(A) \sum_{\sigma \in S_n} ((\sigma) \prod_{i=1}^{n} a_{i,\sigma_i})$	Computation of 3x3 determinant	$=$
5. What is the formula for Hypergeometric function?		
${}_2F_1(a,b;c;z) \sum_{k=0}^{\infty} \frac{\Gamma(a+k)\,\Gamma(b+k)\,\Gamma(c)}{\Gamma(a)\,\Gamma(b)\,\Gamma(c+k)} \frac{z^k}{k!}$	$c_{k+1}/c_k = P(k)/Q(k) = ...$	$=$
6. What is the formula for Continued fraction?		
$a_0 + \cfrac{b_1}{a_1 + \cfrac{b_2}{a_2 + \cfrac{b_3}{a_3 + ...}}}$	3.17	$>$
7. What is the formula for Pitman-Yor process?		
No result	No result	$=$
8. What is the formula for Refractive index?		
$n = \frac{c}{v}$	$n = \frac{c}{v}$	$=$
9. What is the formula for Logistic map?		
$x_{n+1} = r x_n (1 - x_n)$	No result	$>$
10. What is the formula for Multimodal learning?		
$E(\mathbf{v}, \mathbf{h}; \theta) = -\sum_{i=1}^{D} \sum_{j=1}^{F} W_{ij} v_i h_j$ $-\sum_{i=1}^{D} b_i v_i - \sum_{j=1}^{F} a_j h_j$	No result	$>$

Our system	Wolfram Alpha	Performance
11. What is the formula for Force?		
$F = ma$	Movie information for *The Formula*	$>$
12. What is the formula for Legendre symbol?		
$TV \to W$	$Q_n^m(z) = \lim_{\tilde{m} \to m} Q_n^{\tilde{m}}(z)$ for $m \in \mathbb{Z}$	$=$
13. What is the formula for Quadratic equation?		
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	$=$
14. What is the formula for Binary logarithm?		
$x = \log_2 n \iff 2^x = n$	$\log_2(x) = (2 \log(\sqrt{x}))/\log 2$	$>$
15. What is the formula for Binomial coefficient?		
$\binom{n}{k} = \frac{n!}{k!(n-k)!}$	Computation of binomial coefficient	$=$
16. What is the formula for Mandelbrot set?		
$z_{n+1} = z_n^2 + c$	$z_{(}n+1) = z_n^2 + c \mid z_0 = 0$	$=$
17. What is the formula for Hessian form of an elliptic curve?		
No result	$x(t) = at^2, y(t) = at^3$	$<$
18. What is the formula for L'Hopital's rule?		
No result	$\lim(f(x)/(g(x)) = \lim(f'(x)/(g'(x))$	$<$
19. What is the formula for Golomb sequence?		
$a_n = \varphi^{2-\varphi} n^{\varphi-1}$	$a_n = Round[\phi^{2-\phi} n^{\phi-1}]$	$<$
20. What is the formula for Polynomial?		
$P(x) = \sum_{k=0}^{n} a_k x^k$	Computation of polynomial	$=$

Our system	Wolfram Alpha	Performance
21. What is the formula for Common logarithm?		
$\log_{10}(x) = \frac{\ln(x)}{\ln(10)}$	$\log_{10}(x) = (2\log(\sqrt{x}))/\log(10)$	$=$
22. What is the formula for Faraday's law of induction?		
No result	$\|\varepsilon\| = \left\|\frac{d\Phi_B}{dt}\right\|$	$<$
23. What is the formula for P versus NP problem?		
No result	The determination of whether all NP-problems are actually P-problems.	$<$
24. What is the formula for Gamma function?		
$\Gamma(z) = \int_0^\infty e^{-t}t^{z-1}dt$	$\Gamma(x) = \Gamma(n+x)/x_n$	$=$
25. What is the formula for Chain rule?		
$(f \circ g)' = (f' \circ g) \cdot g'$	$(dy)/(dx) = (dy)/(du) \cdot (du)/(dx)$	$=$
26. What is the formula for Pythagorean theorem?		
$c^2 = a^2 + b^2$	$a^2 + b^2 = c^2$	$=$
27. What is the formula for Pythagorean triple?		
$a = m^2 - n^2, b = 2mn, c = m^2 + n^2$	$a^2 + b^2 = c^2$	$>$
28. What is the formula for Jensen's inequality?		
No result	$f(\sum_{i=1}^n p_i x_i) <= \sum_{i=1}^n p_i f(x_i)$ if f convex	
	$f(\sum_{i=1}^n p_i x_i) >= \sum_{i=1}^n p_i f(x_i)$ if f concave	$<$
29. What is the formula for Logistic function?		
$f(x) = \frac{L}{1+\mathrm{e}^{-k(x-x_0)}}$	$1/(1+exp(-x)) = e^x/(1+e^x)$	$>$
30. What is the formula for Convolution?		
$(f * g)(t) \stackrel{\text{def}}{=} \int_{-\infty}^\infty f(\tau)g(t-\tau)d\tau$		
$= \int_{-\infty}^\infty f(t-\tau)g(\tau)d\tau$	No result	$>$
Evaluation results:		
$14 =, 10 >, 6 <$		