***** Mathematical Weekly *****

Week 36

2016 = $2^5+2^6+2^7+2^8+2^9+2^{10}$

= $3\times3^3\times3^3-(3\times3^3+3\times3^3+3\times3)$

= $(4+4)\times(4^4-4)$

= $5+\dfrac{(5+5)^{5^{\frac{5}{5}}}+55}{5}$

= 666 + 666 + 666 + 6 + 6 + 6

= $7+7\times(7\times(7\times7-7)-7)$

= $\dfrac{8\times8\times(8\times8\times8-8)}{8+8}$

= 888 + 888 + 88 + 88 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8

= 999 + 999 + 9 + 9

$$y=\frac{\ln\left(\frac{2016}{H}\right)}{p^2\ln(a)} \quad\Rightarrow\quad \ln(a)=\frac{\ln\left(\frac{2016}{H}\right)}{p^2y}$$

$$\Rightarrow\quad a=\left(\frac{2016}{H}\right)^{\frac{1}{p^2y}} \quad\Rightarrow\quad a^{p^2y}=\frac{2016}{H}$$

So

$$Ha^{p^2y}=2016 \quad\Rightarrow\quad Ha^{ppy}=2016$$

GRC ☺