

$\frac{1}{2}$:

$$\left(8\left(\frac{1}{2}\right)^4 + 1\right)^2 \pm \left(8\left(\frac{1}{2}\right)\right)^3 - 1 = \begin{cases} \left(\frac{3}{2}\right)^2 \\ \left(\frac{3}{2}\right)^2 - 2 = \frac{9-8}{4} = \frac{1}{4} = \left(\frac{1}{2}\right)^2 \end{cases}$$

1 :

$$\left(8 \times 1^4 + 1\right)^2 \pm \left(8 \times 1^3\right)^2 - 1 = \begin{cases} 9^2 + 8^2 - 1 = 144 = 12^2 \\ 9^2 - 8^2 - 1 = 16 = 4^2 \end{cases}$$

2 :

$$\left(8 \times 2^4 + 1\right)^2 \pm \left(8 \times 2^3\right)^2 - 1 = \begin{cases} 129^2 + 64^2 - 1 = 16641 + 4096 - 1 = 20736 = 144^2 \\ 129^2 + 64^2 - 1 = 12544 = 112^2 \end{cases}$$

3 :

$$\left(8 \times 3^4 + 1\right)^2 \pm \left(8 \times 3^3\right)^2 - 1 = \begin{cases} 649^2 + 216^2 - 1 = 421201 + 46656 - 1 = 467856 = 684^2 \\ 649^2 + 216^2 - 1 = 374544 = 612^2 \end{cases}$$