問） $\sqrt{99910000 + \frac{81}{4}}$ の値を求めよ。

$99910000 = 9991 \times 10000 = 9991 \times (9991 + 9) = 9991^2 + 9991 \times 9 = 9991^2 + 2 \times 9991 \times \frac{9}{2}$

より

$$\sqrt{99910000 + \frac{81}{4}} = \sqrt{9991^2 + 2 \times 9991 \times \frac{9}{2} + \left(\frac{9}{2}\right)^2}$$

$$= \sqrt{\left(9991 + \frac{9}{2}\right)^2} = 9991 + \frac{9}{2} = \underline{\frac{19991}{2}}$$