

Answer on Question#38520 – Physics - Other

Add $(9.8 \times 10^3 \text{ s}) + (9.9 \times 10^4 \text{ s}) + (0.0080 \times 10^6 \text{ s})$. Your answer should be expressed using the appropriate number of significant figures.

Solution:

$$\begin{aligned}(9.8 \times 10^3 \text{ s}) + (9.9 \times 10^4 \text{ s}) + (0.0080 \times 10^6 \text{ s}) &= \\ (9.8 \times 10^3 \text{ s}) + (9.9 \times 10^4 \text{ s}) + (0.80 \times 10^4 \text{ s}) &= \\ (0.98 \times 10^4 \text{ s}) + (9.9 \times 10^4 \text{ s}) + (0.80 \times 10^4 \text{ s}) &= \\ (0.98 + 9.9 + 0.80) \times 10^4 \text{ s} &= 11.68 \times 10^4 \text{ s}\end{aligned}$$

The answer is 11.68×10^4 s because it must have the same number of decimal places as the one with the least number of decimal places (rule of significant figures in addition and subtraction). In this case, 9.9 has 1 decimal place while 0.80 has 2 decimal places. Thus, their difference must be expressed in 2 decimal places, which is 11.68×10^4 s

Answer: 11.68×10^4 s