Problem 22

About how many floating-point operations can a supercomputer perform each year?

Solution

According to Figure 1.4 on page 10,

$$\text{time for single floating-point operation in a supercomputer} = 10^{-17}\ \text{s}$$

$$\text{one year} = 10^{7}\ \text{s}.$$

Divide the number of seconds in a year by the time for a single floating-point operation in a supercomputer to get the number of operations in a year.

$$\text{Number of Operations} \approx \frac{10^{7}\ \text{s}}{10^{-17}\ \text{s}} = 10^{24}$$