1. Represent the numbers \(\frac{1}{2}, \frac{2}{3}\) and \(\frac{3}{5}\) as floating-point numbers in a system that has 32 bits per word, 24 bits for mantissa, and does rounding.

2. Consider the following Fortran program:

\[
\begin{align*}
H &= 1./2. \\
X &= 2./3. - H \\
Y &= 3./5. - H \\
E &= (X+X+X) - H \\
F &= (Y+Y+Y+Y+Y) - H \\
Q &= F/E \\
\text{WRITE}(6,10) & Q \\
\text{STOP}
\end{align*}
\]

10 FORMAT(1H, G20.10) 
END

The variable Q can take on several different values depending on the floating-point arithmetic hardware used by the computer. Try to figure out why the computer is returning the value of Q if the above program is executed. **Explain your results by using the floating-point representation of these numbers.**