Problem 10: Compute. Show the steps.

$$\left[\left(\frac{2}{3}\right)^{-2} \div \left(\frac{2}{3}\right)^{-4} \times \left(-\frac{3}{2}\right) - \frac{1}{3}\right]^3 \div \left[\left(\frac{7}{3}\right)^5 \div \left(\frac{3}{7}\right)^{-6} + \frac{4}{7}\left(\frac{1}{2}\right)^{-3}\right] =$$

$$= \left[\left(\frac{3}{2}\right)^2 \cdot \left(\frac{2}{3}\right)^4 \times \left(-\frac{3}{2}\right) - \frac{1}{3}\right]^3 \div \left[\left(\frac{7}{3}\right)^5 \cdot \left(\frac{3}{7}\right)^6 + \frac{4}{7} \cdot 2^3\right]$$

$$= \left[-\frac{2}{3} - \frac{1}{3}\right]^3 \div \left[\frac{3}{7} + \frac{32}{7}\right]$$

$$= (-1)^3 \div 5$$

$$= \boxed{-\frac{1}{5}}$$