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Level 6

Thermo Marcos Gonzalez

b)

$$NTU = \frac{UA}{C_{min}}$$

$$C = \dot{m} \times c_p$$

$$\dot{m} = \dot{V} \times \rho$$

$$\dot{V}_H = \frac{130}{60,000} = 0.002167 \text{ m}^3/\text{s}$$

$$\dot{V}_C = \frac{430}{60,000} = 0.007167 \text{ m}^3/\text{s}$$

$$\dot{m}_H = 0.002167 \times 916.7 = 1.986 \text{ kg/s}$$

$$\dot{m}_C = 0.007167 \times 1285 = 9.208 \times 10^{-3} \text{ kg/s}$$

$$C_H = 1.986 \times 4350 = 8641.227$$

$$C_C = 9.208 \times 10^{-3} \times 1005 = 9.459$$

$$\therefore C_C = C_{min}$$

$$NTU = \frac{8.47 \times 0.51}{9.459} = 1.406$$