Water & Steam Properties – Instructor Verification Worksheet

This worksheet is intended for instructional verification. Students should compute properties using handbooks or tables. Instructors may use the calculator to verify results.

Property Requirements

Single Phase & Saturated: density, specific gravity, enthalpy, entropy, Cv, Cp, thermal conductivity, viscosity.

Mixed Phase: density, specific gravity, enthalpy, entropy only.

Part A – Single Phase (T–P)

1. T = 350 K, P = 2 MPa
2. T = 750 K, P = 5 MPa
3. T = 420 K, P = 25 MPa
4. T = 1000 K, P = 0.5 MPa

Part B – Single Phase (P–h)

1. P = 10 MPa, h = 900 kJ/kg
2. P = 3 MPa, h = 3200 kJ/kg
3. P = 50 MPa, h = 700 kJ/kg

Part C – Single Phase (P–s)

1. P = 1 MPa, s = 7.2 kJ/(kg·K)
2. P = 20 MPa, s = 2.5 kJ/(kg·K)
3. P = 8 MPa, s = 6.5 kJ/(kg·K)

Part D – Saturated (T)

1. T = 300 K
2. T = 450 K
3. T = 600 K

Part E – Saturated (P)

1. P = 0.1 MPa
2. P = 5 MPa
3. P = 20 MPa

Part F – Mixed Phase

1. P = 0.5 MPa, x = 0.25
2. T = 400 K, x = 0.6
3. P = 1 MPa, x = 0.9

Instructor Notes

Identify state before calculation. Emphasize degrees of freedom and correct input-pair selection.