

Textbook:

R. S. Figliola and D. E. Beasley, **Theory and Design for Mechanical Measurements**, John Wiley & Sons, Inc., 6th edition 2015.

Problem No	Answer	Remarks
5.29	$\bar{\sigma} = 121323 \text{ lb/ft}^2, u_{\sigma}$ $= 16142 \text{ lb/ft}^2$ or Percentage uncertainty = 13.3 %	
5.31	$v = 60, t_{vp} = 2.0, u_F = 7.05 \text{ N}$ or percentage uncertainty = 3.5 %	
5.38	$u_T = t_{vp} \sqrt{(b_T^2 + s_T^2)} = \mp 2.35 \text{ }^{\circ}\text{C}$	
5.39	$u_p = \pm 2.5 \text{ W or } 2.5 \%$	
5.53	At lowest flow rate $Q=10 \text{ m}^3/\text{min}$, $u_{\Delta P} = \pm 2.5 \text{ Pa}$. At $Q=40 \text{ m}^3/\text{min}$, required $u_{\Delta P}$ is $\pm 40 \text{ Pa}$	