

## ANSWERS TO SELECTED PROBLEMS

### *Fundamentals of Engineering Thermodynamics*

8<sup>th</sup> Edition by Moran, Shapiro, Boettner, and Bailey, 2014

#### Chapter 6

- 6.3 (b) 7.7622, (d) 1331.94  
6.7 (a) 368.8, 638.8  
6.10 40, 524.6  
6.11 -0.0197  
6.13 (a) 800, (b) -3.369  
6.16 0.5  
6.20 Process 1-2:0. -254.25  
6.23 65.6, 873.3  
6.28 (b) 375, (c) -29.17  
6.30 (a) 1000, (b) 50%  
6.33 (a)  $p_1 = 64,150$ , (c) 75%  
6.36  $\sigma < 0$ ; not possible  
6.39 (a) 596, (c) 0.885  
6.42 (a) -1872.9, (b) 2.5265  
6.46 No  
6.49 No, from the system  
6.54 Claim invalid  
6.57 (b) 0.4608  
6.60 (a) 83, (b) 1.8378  
6.64 (b) 3, (c) 0.1274  
6.68 (a) 0.3709  
6.74 (b)  $T_H \geq T_H$ ,  $T_C \geq T_C$   
6.78  $5.72 \times 10^5$   
6.80 Not correct  
6.82 (a) -121.6, (b) 0.117  
6.86 0.079  
6.89 (b) 0.072  
6.92 0.328  
6.93 (b) 35  
6.97 Agrees with First Law but not Second Law, cannot operate as claimed  
6.101 (a) -8.53, (b) 0.0129  
6.106 (b) 3.26  
6.108 (a) from 2 to 1, (c) 0.094  
6.111 (b) 577.1  
6.114 (c) 1.87  
6.117 489.7  
6.121 (a) 111, (b) 30.6  
6.125 (c) 107  
6.128 84.95, 410.2  
6.131 2162  
6.134 (a) 705.6, (c) 88.9%  
6.136 two-phase liquid-vapor, 91.5%  
6.140 (b) 11.56, (c) 6.07  
6.143 (a) 94.7%, (b) 0.465  
6.147 (a) 0.0308, (b) 90.3%  
6.151 (b) -105.6, 78.4%  
6.154 (b) 95.4%  
6.156 (a) 2949, (c) 0.056  
6.159 (a) 4.37  
6.163 (a) 117, (b) 33.2%  
6.166 354.83  
6.169 (c) 18.3%  
6.173 (a) -69.5, -13.14  
6.177 -20  
6.181 No  
6.184 1.54  
6.186 (a) 89, (b) 81.8