

**ANSWERS TO PROBLEMS
IN
IRWIN & WU
CHAPTER I**

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|------|---|-------|---------------------------------------|
| 1.1 | $I=60\text{A}$ | 1.19b | $P_1=40\text{W}$ absorbed |
| 1.2 | $\Delta Q=1350\text{C}$ | | $P_2=24\text{W}$ absorbed |
| 1.3 | $\Delta Q=43.2\text{ kC}$ | | $P_{24\text{V}}=48\text{W}$ delivered |
| 1.4 | $\Delta Q=833.3\text{S}$ | | $P_{\text{DEP}}=16\text{W}$ delivered |
| 1.5 | $\Delta Q=1.4\text{C}$ | 1.20 | $I(t)=2\text{A}$ |
| 1.6 | $\Delta W=20\text{MJ}$ | 1.21 | $q(t)=0.15\text{C}$ |
| 1.7 | $\Delta W=12\text{kJ}$ | 1.22 | $P_{\text{V}5}=48\text{W}$ absorbed |
| 1.8 | $\Delta W=432\text{ kJ}$ | 1.23 | $V_x=-1\text{V}$ |
| 1.9 | a) $\Delta Q=8.33\text{ C}$ | 1.24 | $I_x=2\text{A}$ |
| | b) $I=1.67\text{A}$ | 1.25 | $I_s=2\text{A}$ |
| 1.10 | $V_1=-24\text{V}$ | 1.26 | $V_s=18\text{V}$ |
| 1.11 | a) $P_a=4.5\text{kW}$ | 1.27 | $I_0=3\text{A}$ |
| | b) $P_b=1.25\text{W}$ | 1.28 | $W=0.62\text{J}$ |
| | c) $P_c=52.08\text{MW}$ | 1.29 | $W=0.21\text{J}$ |
| 1.12 | a) $P_a=18\text{W}$ absorbed | 1.30 | $W=5.99\text{J}$ |
| | b) $P_b=27\text{W}$ delivered | | |
| | c) $P_c=24\text{W}$ delivered | | |
| | d) $P_d=36\text{W}$ absorbed | | |
| 1.13 | a) $V=5\text{V}$ | | |
| | b) $V=5\text{V}$ | | |
| | c) $V=-5\text{V}$ | | |
| | d) $V=5\text{V}$ | | |
| 1.14 | Element 1: $P_1=12\text{W}$ | | |
| | Element 2: $P_2=8\text{W}$ | | |
| 1.15 | Element 1: $P_1=12\text{W}$ | | |
| | Element 2: $P_2=-8\text{W}$ | | |
| 1.16 | Element 2 absorbs power of 32W | | |
| 1.17 | a) $P_t=8\text{W}$ absorbed | | |
| | $P_2=16\text{W}$ absorbed | | |
| | $P_{12\text{V}}=24\text{W}$ | | |
| | b) $P_1=16\text{W}$ absorbed | | |
| | $P_{8\text{V}}=8\text{W}$ absorbed | | |
| | $P_{24\text{V}}=24\text{W}$ delivered | | |
| 1.18 | a) $P_1=12\text{W}$ absorbed | | |
| | $P_{2\text{V}}=4\text{W}$ absorbed | | |
| | $P_{2\text{A}}=16\text{W}$ delivered | | |
| 1.18 | b) $P_1=16\text{W}$ absorbed | | |
| | $P_{4\text{A}}=48\text{W}$ delivered | | |
| | $P_{\text{DEP}}=32\text{W}$ absorbed | | |
| 1.19 | a) $P_1=16\text{W}$ absorbed | | |
| | $P_{12\text{V}}=24\text{W}$ delivered | | |
| | $P_{\text{DEP}}=8\text{W}$ absorbed | | |