

**KEY - Chem THERMOCHEMICAL EQUATIONS & GIBBS' FREE ENERGY
Practice (#3)**

- 1) $2\text{C}_3\text{H}_8(\text{g}) + 7\text{O}_2(\text{g}) \rightarrow 6\text{CO}(\text{g}) + 8\text{H}_2\text{O}(\text{g})$
- 2) 268.4 g C_3H_8
- 3) 6400 kJ or 6.4×10^3 kJ given off
(-6400 kJ or -6.4×10^3 J... We are asked how much is given off, which implies a negative sign)
- 4) 24.06 g O_2
- 5) 319.4 kJ given off
(-319.4 kJ... We are asked how much is given off, which implies a negative sign)
- 6) 1734 kJ or 1.734×10^3 kJ given off
(-1734 kJ or -1.734×10^3 J... We are asked how much is given off, which implies a negative sign)
- 7) 157.8 g CO
- 8) -52.80 kJ; spontaneous (exergonic)
- 9) +419.38 kJ; nonspontaneous (endergonic)
- 10) +1775.69 kJ; nonspontaneous (endergonic)
- 11) -621.56 kJ; spontaneous (exergonic)
- 12) +1715 kJ; nonspontaneous (endergonic)
- 13) -4232.6 kJ; spontaneous (exergonic)
- 14) -774 kJ; spontaneous (exergonic)
- 15) -3877.5 kJ; spontaneous (endergonic)