Significant Figures and Decimal Digits

Chained Calculations

Problem: Convert 77.4 K into °F

- First convert 77.4 K into °C using the following formula:
  - $T_C = T_K - 273.15$
  - $T_C = 77.4 - 273.15$
    1 Decimal 2 Decimals
  - $T_C = -195.75$ °C
    1 Decimal

Stopping here? $T_C = -195.8$ °C

Problem: Convert 77.4 K into °F

- Next convert -195.75°C (un-rounded) into °F using the following formula:
  - $T_F = 1.8 \times \quad T_C \quad + \ 32$
  - $T_F = 1.8 \times \ (-195.75) \ + \ 32$
  - $T_F = \quad -352.35 \quad + \ 32$
  - $T_F = \quad -320.35\ ^\circ F$

Problem: Convert 77.4 K into °F

- Next convert -195.75°C (un-rounded) into °F using the following formula:
  - $T_F = 1.8 \times T_C + 32$
  - Exact; 4 Sig. Figs.; Exact
  - $T_F = 1.8 \times (-195.75) + 32$
  - 4 Sig. Figs.
  - $T_F = -352.35 + 32.0000000\ldots$
  - 1 decimal
  - $T_F = -320.35\ °F$
  - 1 decimal

$T_F = -320.4\ °F$

1 decimal