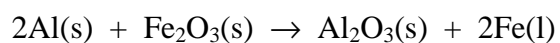


**Marks**  
**6**

- The thermite reaction is written below. Show that the heat released in this reaction is sufficient for the iron to be produced as molten metal.



Assume that the values in the table are independent of temperature.

Substance	Enthalpy of formation, $\Delta_f H^\circ$ kJ mol <sup>-1</sup>	Molar heat capacity, $C_p$ J K <sup>-1</sup> mol <sup>-1</sup>	Melting point °C	Enthalpy of fusion kJ mol <sup>-1</sup>
Al	0	24	660	11
Al <sub>2</sub> O <sub>3</sub>	-1676	79	2054	109
Fe	0	25	1535	14
Fe <sub>2</sub> O <sub>3</sub>	-824	104	1565	138