

## Quiz 2.3 – Thermochemistry

Name: \_\_\_\_\_

**Kirchoff's Law**Consider the reaction:  $\text{CH}_4(\text{g}) + 2 \text{O}_2(\text{g}) \longrightarrow 2 \text{H}_2\text{O}(\text{g}) + \text{CO}_2(\text{g})$ ○ Find  $\Delta_{\text{rxn}} H^\ominus$  for this reaction at 298 K using the following data:

298 K	$\text{CH}_4(\text{g})$	$\text{O}_2(\text{g})$	$\text{H}_2\text{O}(\text{g})$	$\text{CO}_2(\text{g})$
$\Delta_f H^\ominus$	$-74.81 \frac{\text{kJ}}{\text{mol}}$	$0 \frac{\text{kJ}}{\text{mol}}$	$-241.82 \frac{\text{kJ}}{\text{mol}}$	$-393.51 \frac{\text{kJ}}{\text{mol}}$

○ Assuming that these gases have perfect gas heat capacities in the low temperature limit, find  $\Delta_{\text{rxn}} C_p$ ○ Find  $\Delta_{\text{rxn}} H^\ominus$  at 265 K

*The Mortician in San Francisco*

By Randall Mann

This may sound queer,  
but in 1985 I held the delicate hands  
of Dan White:  
I prepared him for burial; by then, Harvey Milk  
was made monument—no, myth—by the years  
since he was shot.

I remember when Harvey was shot:  
twenty, and I knew I was queer.  
Those were the years,  
Levi's and leather jackets holding hands  
on Castro Street, cheering for Harvey Milk—  
elected on the same day as Dan White.

I often wonder about Supervisor White,  
who fatally shot  
Mayor Moscone and Supervisor Milk,  
who was one of us, a Castro queer.  
May 21, 1979: a jury hands  
down the sentence, seven years—

in truth, five years—  
for ex-cop, ex-fireman Dan White,  
for the blood on his hands;  
when he confessed that he had shot  
the mayor and the queer,  
a few men in blue cheered. And Harvey Milk?

Why cry over spilled milk,  
some wondered, semi-privately, for years—  
it meant “one less queer.”  
The jurors turned to White.  
If just the mayor had been shot,  
Dan might have had trouble on his hands—

but the twelve who held his life in their hands  
maybe didn't mind the death of Harvey Milk;  
maybe, the second murder offered him a shot  
at serving only a few years.  
In the end, he committed suicide, this Dan White.  
And he was made presentable by a queer.