Mr. Bracken
AP Chemistry

Name _____
Period ____

Thermochemistry: Gibbs Crossover Temperatures

Consider the following situations.

1. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = -9000

ΔS^o = -50

Is there a temp where spontaneity changes?

2. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = -7000

ΔS^o = +80

Is there a temp where spontaneity changes?

3. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = +9000

ΔS^o = +20

Is there a temp where spontaneity changes?

4. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = +5000

ΔS^o = -120

Is there a temp where spontaneity changes?

5. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = +23800

ΔS^o = +50

Is there a temp where spontaneity changes?

6. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = -12000

ΔS^o = +45

Is there a temp where spontaneity changes?

7. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = -8500

ΔS^o = -20

Is there a temp where spontaneity changes?

8. **A + B → C**

Spontaneous at 300 K? _____

ΔH^o = +95000

ΔS^o = +110

Is there a temp where spontaneity changes?