

Name: _____ Period: _____

Reaction Order and Rate Law Expression Worksheet1. Reaction: $C + D \rightarrow E$

Exp #	[C]	[D]	Rate (mole dm ⁻³ s ⁻¹)
1	0.1	0.01	0.02
2	0.1	0.02	0.04
3	0.1	0.03	0.06
4	0.1	0.04	0.08
5	0.2	0.04	0.08
6	0.3	0.04	0.08

- What is the rate order of reactant C?
- What is the rate order of reactant D?
- What is the rate law for the reaction?

2. Reaction: $F + G \rightarrow H$

Exp #	[F]	[G]	Rate (mole dm ⁻³ s ⁻¹)
1	0.01	0.4	0.02
2	0.02	0.4	0.04
3	0.03	0.4	0.06
4	0.1	0.2	5
5	0.1	0.4	10
6	0.1	0.6	15

- What is the rate order of reactant F?
- What is the rate order of reactant G?
- What is the rate law for the reaction?

3. Reaction: $C + D \rightarrow E$

Exp #	[C]	[D]	Rate (mole dm ⁻³ s ⁻¹)
1	0.1	0.01	0.02
2	0.1	0.02	0.08
3	0.1	0.03	0.18
4	0.1	0.04	0.32
5	0.2	0.04	1.28
6	0.3	0.04	2.88

- What is the rate order of reactant C?
- What is the rate order of reactant D?
- What is the rate law for the reaction?

4. Reaction: $F + G \rightarrow H$

Exp #	[F]	[G]	Rate (mole dm ⁻³ s ⁻¹)
1	0.01	0.4	0.02
2	0.02	0.4	0.16
3	0.03	0.4	0.54
4	0.1	0.2	5
5	0.1	0.4	20
6	0.1	0.6	45

- What is the rate order of reactant F?
- What is the rate order of reactant G?
- What is the rate law for the reaction?

5. Reaction: $A_2 + B_2 \rightarrow 2 AB$

Exp #	[A ₂]	[B ₂]	Rate (mole dm ⁻³ s ⁻¹)
1	0.001	0.001	0.01
2	0.001	0.002	0.02
3	0.001	0.003	0.03
4	0.001	0.004	0.04
5	0.002	0.004	0.16
6	0.003	0.004	0.36

- What is the rate order of reactant A₂?
- What is the rate order of reactant B₂?
- What is the rate law for the reaction?