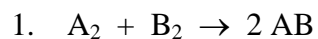


Reaction Order and Rate Law Expression Worksheet

Given the following equations and experimental data, write the correct

- Rate Law Expression
- Reaction Order
- Determine k, the Specific Rate Constant (including units)

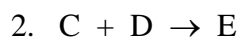


| Exp # | [A ₂] | [B ₂] | Rate (mole dm ⁻³ s ⁻¹) |
|-------|-------------------|-------------------|--|
| 1 | 0.001 | 0.001 | 0.01 |
| 2 | 0.001 | 0.002 | 0.02 |
| 3 | 0.001 | 0.003 | 0.03 |
| 4 | 0.001 | 0.004 | 0.04 |
| 5 | 0.002 | 0.004 | 0.16 |
| 6 | 0.003 | 0.004 | 0.36 |

a.

b.

c.



| 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 |

a.

b.

c.



| 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 | 0.10 |
| 5 | 0.1 | 0.4 | 0.20 |
| 6 | 0.1 | 0.6 | 0.30 |

a.

b.

c.



| 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 |

a.

b.

c.



| 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 |

a.

b.

c.