**Answers to Reaction Rates Practice**

1.

a) **Data Table**

|  |  |  |
| --- | --- | --- |
| Time (min) | [I-] (mol/L) | [I2] (mol/L) |
| 0.0 | 0.0800 | **0** |
| 0.2 | 0.0400 | **0.02** |
| 0.4 | 0.0200 | **0.03** |
| 0.6 | 0.0100 | **0.035** |
| 0.8 | 0.0050 | **0.0375** |
| 1.0 | 0.0025 | **0.0387** |

b) **Calculate the rate**

Rate = 

= 6.5 × 10-4 mol/L∙s

c) Rate = (0.0375 – 0.03) mol/L

24 s

= 3.1 × 10-4 mol/L∙s

**2.** At 10 s, 0.53 moles of CO(g) is present.

Repeat calculations for subsequent intervals.

The following table summarizes the results.

|  |  |  |  |
| --- | --- | --- | --- |
| **Time (s)** | **Fe(s) present (mol)** | **Fe(s) used (mol)** | **CO(g) present (mol)** |
| **0** | 1.10 | 0 | 0 |
| **10** | 0.75 | 0.35 | 0.53 |
| **20** | 0.60 | 0.50 | 0.75 |
| **30** | 0.50 | 0.60 | 0.90 |
| **40** | 0.45 | 0.65 | 0.98 |
| **50** | 0.42 | 0.68 | 1.02 |



**3.** The average rate of formation of CO2 is **4.29 × 10−4 mol/min** or **7.14 x 10-6mol/s.**