

## AP WORKSHEET 05C: ANSWERS

1.

- (a) See graph
- (b) At the beginning of the reaction. The curve has the steepest gradient at this point
- (c) Read from the graph the point at which the curve becomes horizontal
- (d) Same start and finish but steeper at the beginning. Curve for powder should reach a horizontal earlier than the curve with ribbon
- (e) Change of temperature, addition of a catalyst
- (f)  $\text{Mg}_{(s)} + 2\text{HNO}_{3(aq)} \rightarrow \text{Mg}(\text{NO}_3)_{2(aq)} + \text{H}_2(g)$

2.

- (a) See graph
- (b) They were the same
- (c) Read from the graph the point at which the curves become horizontal
- (d) mL per unit time
- (e)  $\text{CaCO}_{3(s)} + 2\text{HCl}_{(aq)} \rightarrow \text{CaCl}_{2(aq)} + \text{CO}_{2(g)} + \text{H}_2\text{O}_{(l)}$
- (f) Size of chips dictates surface area. The smaller the chips, the greater the surface area and the faster the rate of reaction

3.

- (a) See graph
- (b) First Order
- (c) Determine from graph
- (d)  $\text{Rate} = k[\text{A}][\text{G}]^2$

4.

- (a) See graph
- (b) Zero
- (c) It is constant

5.

- (a) See graph
- (b) Zero

6.

- (a) See graph, slope of  $\ln k$  (y axis) versus  $1/T$  (x axis) =  $-E_a/R$